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JANUARY
1925

Index Dec.

# VETERINARY MEDICINE

4753 GRAND BOULEVARD, CHICAGO

## IN THIS ISSUE

GRADUATE COURSES, SHORT COURSES AND CONFERENCES

PRIZE WINNERS IN CASE REPORT CONTEST

VETERINARY EVENTS OF 1924

NEW SUGGESTIONS ON SWAMP FEVER THERAPY
By C. H. GRUNERT

WAR GAS IN THE TREATMENT OF DISEASE
By C. F. REX

ABDOMINAL DISEASES OF FOWLS
By B. F. KAUPP

RUMENOTOMY IN COW
By R. W. BALKAM

TRAMATIC PERICARDITIS
By W. B. CHAPMAN

PARALYSIS IN SWINE
By A. T. KINSLEY

DEVICE FOR RAISING FALLEN HORSES
By J. T. ALSTON

STRYCHNIN POISONING IN DOGS
By J. SERLING

—and 35 Other Articles

Table of Contents, page 4
Classified Advertisements, page 31

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VOL. XX CONTENTS FOR JANUARY No. 1



| | Page |
|---|---|
| Graduate Courses, Short Courses and Conferences | 1 |
| The Prize Winners | 3 |
| Foot-and-Mouth Disease Apparently Eradicated | 3 |
| The Prize Contest for February | 4 |
| Conditions Affecting Practice | 4 |
| Veterinary Surgery | 5 |
| Veterinary Events of 1924 | 7 |
| New Suggestions on Swamp Fever Therapy, by C. H. Grunert | 15 |
| War Gas in the Treatment of Disease, by C. F. Rex | 18 |
| Items of Interest to the Practitioner, by A. T. Kinsley | 20 |
| Poisonous Plants, by L. H. Pammel | 23 |
| Common Abdominal Diseases of the Domestic Fowl, by B. F. Kaupp | 25 |
| Helpful Hints in Equine Practice, by L. A. Merillat | 29 |
| Rumenotomy in Cow, by Ralph W. Balkam | 30 |
| Formula Similar to Absorbine | 30 |
| Infected Udder Surgically Treated, by W. B. Chapman | 31 |
| Sterility in Cow | 31 |
| Metritis Suspected | 31 |
| Traumatic Pericarditis in Cow with Usual Termination, by W. B. Chapman | 32 |
| Luxation of the Femur in a Cow, by Donald Campbell | 33 |
| Malady Simulating Sweet Clover Disease in Cattle, by A. T. Kinsley | 33 |
| Recovery from Pericarditis, by W. N. Hobbs | 34 |
| Hemorrhagic Septicemia Aggressin vs. Bacterin, by A. T. Kinsley | 34 |
| Formula for Cracked Heels, by T. E. Booth | 35 |
| Mule with Crushed Skull Successfully Treated, by W. D. Howe | 35 |
| Treatment for Choke in Horse | 35 |
| Active Immunization Against Sarcoma | 35 |
| Serum Treatment for Glanders | 36 |
| Unusual Cause of Death, by L. Auchterlonie | 36 |
| Device for Raising Fallen Horses, by J. T. Alston | 36 |
| Paralysis in Swine, by A. T. Kinsley | 38 |
| Tapeworms of Sheep, by M. C. Hall | 38 |
| Strychnin Poisoning in Dogs, by J. Serling | 39 |
| Chronic Cough in Dogs, by J. G. Horning | 39 |
| Rabies Spread by Carriers | 39 |
| Roundworms in Foxes, by Hadley, Warwick and Gildow | 40 |
| Outbreak of Distemper in New England, by E. L. Thornton | 40 |
| Bumblefoot | 42 |
| Cloacitis | 42 |
| Taking Crow out of Roosters | 42 |
| Letter from Brazil, by G. A Roberts | 43 |
| Supplying Mineral Feeds a Side Line for Veterinarians, by L. C. Hull | 43 |



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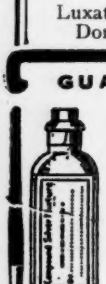

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# Veterinary Medicine

VOL. XX JANUARY, 1925 No. 1

## Graduate Courses, Short Courses and Conferences

The rapid progress that has been made in medical science during the last score of years and the revolutionary changes that have taken place in the practice of medicine and in the instruction in medical colleges, have led to the establishment of a large number of clinics and courses at which physicians may improve themselves professionally or pursue a line of study leading to some of the many specialties in medicine, which are presumed to be more remunerative than general practice.

These graduate courses for physicians have become extremely popular. Judged purely from a business viewpoint, thousands of physicians have found the time and money spent in attending such courses a good investment. In many localities it is said physicians have difficulty in holding their practices if they do not attend graduate courses every year or two and let it be known among their clients. A reputation for keeping up-to-date professionally inspires greater confidence in a physician, enables him to earn and obtain larger fees and to get cases that would otherwise go to men of greater reputation.

At this time when veterinary practice is suffering from a slump, it is particularly desirable that those whose practices have suffered from the depression in agriculture should cast about for every means of improving it. Isn't it possible that in not a few cases some post-graduate work would help? Veterinary medicine has benefited as much as general medicine from the scientific research and discovery of the past twenty years The changes in the best type of veterinary practice have been as revolutionary as have been the changes in the practice of human medicine.

Opportunity is not wanting for additional practice in the realm of genital disease, nutritional ailments, parasitisms and preventive medicine, not to mention tuberculin testing, which gives promise of becoming an important part of the practice of hundreds of general practitioners.

Much has been said of late about advertising or publicity for veterinarians or for the veterinary profession. Perhaps in not a few cases some graduate instruction might be turned into an investment in professional reputation and prove the best kind of advertisement for the individual and publicity for the profession.

It may be urged that the opportunities for graduate work such as are open to the physician do not exist for the veterinarians; but there are plenty of institutions amply equipped to give graduate instruction. When there is sufficient demand for it, there is little doubt that such instruction will be provided. In fact, a number of the veterinary colleges and some universities not giving a veterinary course are cultivating such a demand by offering "short courses" and "conferences" to veterinary practitioners.

Attendance at a considerable number of these conferences during the past ten years inclines the writer to the belief that the best results are attained where such conferences are not held in connection with a meeting of the state veterinary association but independently under the management of the school. Inevitably many attend a state meeting who do not care especially for the serious work of the conference or short course, particularly if worth while laboratory exercises be a part of the short course. Their numbers are a drawback to the success of such instruction

The suggestion is offered that in states offering graduate work for practitioners, such courses be extended to at least a week and that while the project be undertaken in co-operation with the state veterinary association, it be given independently of the state meeting, and that in such states the state veterinary association hold only one meeting annually and that approximately six months from the date of the short course. It appears that such an arrangement might improve both the short course and the state meeting and speedily lead to more extended and more diversified graduate work being provided.

Instruction in the nature of a short course or conference offered for practitioners during the present season is as follows:

**Alabama.** The short course at Auburn will be held February 2nd to 7th inclusive, during the same week as the meeting of the Alabama Veterinary Medical Association.

**Colorado.** A three days' practitioners' short course will be held at the Colorado Agricultural College, Ft. Collins, under the direction of the college veterinarians, in connection with the meeting of the Colorado Veterinary Medical Association, January 14th, 15th and 16th. Some outside talent will be obtained for the program, and a sterility and canine clinic will feature the meeting.

**Iowa.** The tenth annual veterinary conference will be held at Ames, January 22 and 23, immediately following the meeting of the state association, January 20th and 21st.

**Kansas.** The fourth annual conference of Kansas veterinarians will be held in the veterinary buildings of the Kansas State Agricultural College at Manhattan, February 4, 5, 6, together with the annual meeting of the Kansas Veterinary Medical Association.

Those scheduled to take part in the program are Dr. H. C. Gale, President, Kansas Veterinary Medical Association; Dr. E. F. Kubin, Secretary, Kansas State Board of Veterinary Examiners; Dr L. A. Merillat, President, A. V. M. A.; Dr. John W. Adams, University of Pennsylvania; Dr. Maurice C. Hall, B. A. I.; Dr. A. T. Kinsley, Kansas City; Dr. R. R. Dykstra, Dean of Division of Veterinary Medicine; Dr. W. M. McLeod, Associate Professor of Comparative Anatomy; Dr. H F. Lienhardt, Professor of Pathology; Dr. R. W. Hinshaw, Instructor in Poultry Diseases; Dr. J. H. Burt, Professor ofPhysiology; Dr. C. E. Sawyer, Assistant Professor of Pathology; Dr. L. D. Bushnell, Professor of Bacteriology; J. B. Fitch, Professor of Dairy Husbandry; Arthur C. Fay, Assistant Professor of Bacteriology; Dr. E. J. Frick, Associate Professor of Comparative Medicine; Dr J. F. Bullard, Instructor in Therapeutics and Clinics; Dr, C. H. Kitselman, Assistant Professor of Veterinary Research; Dr. J. P. Scott, Associate Professor of Pathology.

A varied clinic consisting of demonstrations and operations on dead, formalin hardened subjects and live subjects, including horses, cattle, sheep, swine, dogs and poultry, will be handled by Doctors Adams, Merillat, Frick, Bullard, Hinshaw and others.

**Michigan.** The second annual post-graduate course for veterinarians will be held at the Michigan Agricultural College, January 26th to 30th, inclusive. The plan this year is to focus attention on some particular subject each day, which will enable men to come for a single day and get something worth while.

The morning of the first day will be devoted to registration and consultation with the staff, and the afternoon will be taken up with the subject of parasites and their control. Farm sanitation will be the subject for January 27th, also discussions of dietary and nutritional disturbances; January 28th, heredity and breeding problems; January 29th, surgery and clinic; January 30th, poultry diseases. It is expected that Prof. D. H. Udall of Cornell University, will have charge of the program on January 27th.

**New York.** The 17th annual conference of the New York State Veterinary College at Cornell University, Ithaca, will consist of a two-day program for veterinarians, January 15th and 16th This is the only special instruction given to practitioners at the school this year.

**Ontario.** A conference will be held at the Ontario Veterinary College, Toronto, some time during February. The policy of the college in regard to these conferences is to meet the wishes of the practicing veterinarians, and the expenses of outside speakers and demonstrators are defrayed by the college.

**Pennsylvania.** A conference of veterinarians will be held at the University of Pennsylvania, January 6th and 7th, when the following program will be presented:

Opening remarks by Dr. Louis A. Klein, Dean.

The Basis of Symptoms in the Nervous Form of Dog Distemper (illustrated), by Dr. S. A. Goldberg, Cornell University.

Result of Treatment of 800 Cases of Azoturia, by Dr. V. G. Kimball.

Hygroma of Knee of Cattle, by Dr. J. W. Adams.

White Diarrhea of Chicks and its Control, by Dr. F. R. Beaudette, New Jersey Experiment Station.

Foot-and-Mouth Disease, by Dr. J. R. Mohler, Chief, B. A. I.

Hemorrhagic Septicemia Aggressin, by Dr. Wm. S. Gochenour, B. A. I.

Principles of Immunity and Biologic Therapy, by Dr. John A. Kolmer.

Vitamins in Animal Nutrition (illustrated), by Dr. R. Adams Dutcher.

Relation of the Calf to the Spread of Abortion, by Dr. F. M. Hayes, University of California.

Bovine Abortion and its Control, by Dr. M. F. Barnes, Pa., B. A. I.

Abortion from the Breeder's Standpoint, by Mr. Percival Roberts, Jr.

**Wisconsin.** The annual short course for Wisconsin veterinarians will be held at the University of Wisconsin, Madison, January 27th to 30th inclusive, in co-operation with the tenth annual meeting of the Wisconsin Veterinary Medical Association. An extensive program is being prepared and will be mailed to all who are interested.

**Ohio.** The veterinary department of the State University at Columbus will hold no formal veterinary conference, but the State Veterinary Association will hold its annual meeting at the university January 7 and 8; as the faculty of the veterinary department takes a considerable part in the meeting, it takes on some of the aspects of a conference.

**California.** The customary short course at Berkeley will not be held this year. The outbreak of foot-and-mouth disease occasioned the postponement of the annual meeting of the state association last June. It was held at Pasadena, December 29th to 31st, and on that account the short course has been abandoned for this year

## FOOT-AND-MOUTH DISEASE APPARENTLY ERADICATED

The close of 1924, which, for the first time in the history of this country, saw two unrelated outbreaks of foot-and-mouth disease, saw the country again free of the plague and in a better position to prevent the re-entrance or to promptly eradicate future outbreaks than ever before.

The extensive outbreak of 1914-15 and the two outbreaks of this plague in 1924 have familiarized a large number of veterinarians in practice and in the B. A. I. with this disease and the methods necessary to its control. The success in eradicating all three outbreaks has inspired the confidence of the cattle industry in these methods so there is a marked lessening of opposition to them on the part of state officials and the public.

There are no cattle now in the ranges in the Stanislaus National Forest, the last place in which the disease was found, and none will be permitted to return to these ranges for eighteen months. The work of exterminating the wild deer on these ranges has been proceeding in a systematic, vigorous manner and will be prosecuted until it is believed all danger from this source is eliminated.

## THE PRIZE WINNERS

The contest for clinical reports and similar matters for the January issue, announced last month, resulted in the receipt of an unusually meritorious group of manuscripts. Sixteen manuscripts by thirteen different veterinarians were submitted. Because of the amount of space used this month in the sketchy review of occurrences of veterinary interest during 1924, we are unable to publish all of them in this issue. There is not one among them, however, that is not well worth publishing, and all not published this month, will be published in the next issue.

Dr. N. S. Mayo of Chicago, widely experienced in practice, as a teacher, as a state veterinarian, as a writer on veterinary subjects, in commercial lines, and for several years secretary of the A. V. M. A., acted as judge for the January contest, and made the awards as follows:

First Prize: Fifteen dollars to Dr. Ralph W. Balkam, Springfield, Mass., for his article on rumenotomy in a cow, published in this issue.

Second Prize: Eight dollars to Dr. W. B. Chapman, Powersville, Mo., for his discussion of the surgical treatment of an infected udder, published in this issue.

Third Prize: A yearly subscription to Veterinary Medicine to Dr. W. B. Chapman, Powersville, Mo., for his report on traumatic pericarditis in a cow, published in this issue.

Fourth Prize: Two dollars to Dr. J. Serling, Bronx, New York, for his article on strychnin poisoning in dogs, published in this issue.

All others who submitted manuscripts in this contest have been sent copies of the new third edition of Hall's "Diagnosis and Treatment of Internal Parasites."

For the information of those interested, Dr. Mayo kindly consented to give the following as an indication of how he arrived at his decisions:

"Different individuals differ in their ideas as to what constitutes a good case report. To me the most important point is that a clear picture should be given of the condition of the patient. The practitioner's own opinion as to the nature of the disease may not be correct, but if a detailed picture is visualized, every reader can make his own diagnosis. With this in mind I have placed the prizes in accordance with the clearness of the picture of the ailing animal as it appealed to me Whether the treatment was successful was not considered, although a new and logical treatment should be a factor in a good case report."

## THE PRIZE CONTEST FOR FEBRUARY

For full details of the contest, refer to the announcement in the December issue, page 621. In brief, the conditions are:

To stimulate a greater interest among its readers in reporting their experiences for the benefit of others in the profession, Veterinary Medicine will give during 1925 cash prizes amounting to $300.00 and various other prizes of an undetermined value. The main prizes are twelve first prizes of $15.00 each, twelve second prizes of $8.00 each, twelve third prizes of a yearly subscription to Veterinary Medicine, and twelve fourth prizes of $2.00 each. One of each of these four prizes is to be awarded each month.

Different judges will pass upon the manuscripts submitted in the contest for each month, and contestants may submit as many different manuscripts as they choose for any month.

The scope of discussions that may be entered in this contest is very wide and rather difficult to define. In general, it includes what is commonly referred to as "case reports," "clinical notes," "autopsy findings," "useful contrivances in practice," "helpful hints," "professional problems," etc. For the present, minimal and maximal limtis of 200 to 2,000 words will be set upon manuscripts admissible to this contest.

The contest for February closes January 10th. We urge readers to participate in it. Write up some of your experiences. Those who have done it say it isn't hard after you once get started. In addition to the four main prizes, we will renew for February the offer made in the January contest to send copies of Dr. Hall's new work to all who submit manuscripts that are deemed worthy of publication.

## PUBLIC HEALTH EXPENDITURE INADEQUATE

Because of lack of adequate health service, we have among our people every year scores of thousands of premature deaths, hundreds of thousands of cases of preventable, incapacitating, painful illness, and an economic loss exceeding many times the amount of money necessary to provide such service. Saving at the spigot and losing at the bung is not economy. About two millions of our people are incapacitated by illness all the time. Many of them are wage earners. Figure the daily economic loss. A large proportion of it is preventable.

About 70 per cent of our school children are incapacitated, more or less, by physical defects, most of which are preventable or remediable. If it were necessary, because of national poverty, to resort to such an extreme measure, we might discontinue for two years of the next decade all appropriations for public schools, expend the money so saved in business-like public health service, and actually be ahead with the results of our public school system at the end of the ten-year period.

Of the total appropriation of about $3,400,000,000 by Congress for the fiscal year 1924, less than two-tenths of one per cent was available for the distinctly public health activities of the United States Public Health Service.—Amer. Jour. Public Health.

## CONDITIONS AFFECTING PRACTICE

In parts of the country, veterinary practice was better during 1924 than it was during 1923. In large sections of the country, conditions were about the same. In no considerable sections were conditions worse for the practitioner than during the preceding year, so on the whole there was an improvement in the average income from veterinary practice Collections were better than previously in practically all farming sections.

There was less hog cholera in pretty much all the large swine producing states than last year, and the amount of vaccinating done by veterinarians totaled only 55 per cent of what it did in 1923; representing a very material decrease in income for perhaps a fifth of the practitioners in the country. To keep up and improve the general average of practice, this loss in vaccination had to be made up by marked increases in other lines of practice. Of the increases, tuberculin testing, small animal practice and poultry practice contributed the major part in the order named.

In addition to furnishing a small amount of official testing for approximately 6,000 accredited veterinarians, there was, particularly in some sections, a big increase in the amount of private tuberculin testing. Further, the official testing withdrew 588 veterinarians from practice and other lines of veterinary work, leaving the field less crowded to just that extent, and leaving a proportionately larger amount of practice for those remaining.

Unless the next few years should see a great prevalence of hog cholera, which seems unlikely, in view of the present tendency to limit promptly outbreaks of this disease by the immunization of swine on surrounding farms, official tuberculin testing is likely to exercise a greater influence on veterinary practice in the

immediate future than any other factor. Bovine tuberculosis eradication is progressing in a geometrical ratio, and those are not wanting who predict that the project will be extended to include all cattle in the United States within eight years from this date. Approximately one-sixth of our cattle are under official supervision now, and the work occupies the full time of one-tenth of the accredited veterinarians or about one-fifteenth of the whole number engaged in veterinary practice as a principal occupation.

Calculating on the foregoing basis, we would look forward to the time at an early date when 60 per cent of the number of veterinarians now accredited or 40 per cent of the whole number engaged in practice will be devoting their time exclusively to tuberculin testing. There is no apparent probability that our schools will increase the number of veterinarians in the country within a decade. Our immigration laws preclude an increase from foreign fields. There is not a prospect that other fields of veterinary endeavor will require fewer men in the near future than they do now.

The effect on veterinary practice will be the same whether 40 per cent of the men in the field are withdrawn from it for tuberculin testing or whether the testing is done by the general practitioner and on the average 40 per cent of his time is taken up by this work. In the one case, 60 per cent of the number now in practice would have the practice now done by 100 per cent, or an increase in practice for those remaining of 66-2/3 per cent. In the other, the income now derived from practice would be spread over only 60 per cent of the practitioner's time, and the income from 40 per cent of his time devoted to tuberculin testing would be gain.

Such a condition would speedily increase the enrollment in the veterinary colleges and, of course, attract to the profession some who have left it for other lines of endeavor. It would also produce a material shifting of the veterinary population of the country. In this connection, it is pertinent to mention that confining official tuberculin testing to veterinarians in the past has been no easy problem and is not likely to prove less difficult in the near future.

---

Tuberculin is a specific toxic substance produced by the bacillus of tuberculosis. It is used for diagnostic purposes for the detection of active and latent forms of tuberculosis in animals. A potent tuberculin when properly and carefully applied and the results capably interpreted is one of the most reliable diagnostic agents which we have at our command.

## VETERINARY SURGERY

In an article in a recent issue of Veterinary Medicine (September, page 508), the decline of veterinary surgery (in quantity, not quality) was deplored and the inference drawn that the decline is in no small part due to neglect of this phase of veterinary practice for some of the newer things that have come into the practice of nearly all and attained great popularity, particularly preventative medicine and the wide employment of diagnostic agents for the discovery of occult ailments.

The opinion was expressed that some measure of the indifference of the profession to surgery was attributable to the attitude of our veterinary colleges to this subject and the pessimistic prognosis frequently made as to the outcome of operations for fistula cited as an example.

In defense of the colleges, Dr H. E. Bemis takes us to task in the matter and assures us that, at least, in so far as the Iowa State College is concerned, the writer of the article is all wrong, further stating that at the clinic under his charge, operations for the relief of fistula of the withers is one of the most frequently performed of operations, 138 such operations having been performed in the rather recent past; their records on these cases showing definitely that in more than fifty per cent of the cases the treatment was successful. This showing is made notwithstanding many of the clinic cases are lost track of soon after the operation. It is a fair inference that in addition to the fifty per cent know to have been cured, in many of the lost cases, the treatment was also successful.

The Professor further states that he regards only a small percentage of the cases of fistula of the withers brought to his clinic as being cases which cannot be successfully operated upon, because of the fact that when they are presented for operation the process has already extended beyond the region from which drainage can be obtained or the ligament is so extensively involved that all parts of it cannot possibly be removed.

Far from deprecating the value of good vetinary surgery, Doctor Bemis is an exponent and proponent and advocate of its high value to the live stock owner and its importance to the veterinary practitioner as a revenue producer and service to his patrons; stating that "Surgery not only renders service to the patron and produces revenue to the operator, but helps the operator to demonstrate his ability to the owner along this line, which should be a fair criterion of his ability along all lines."

In a material sense, the words of the Psalmist: "All flesh is grass," is true. Without the vitamins produced in plants, there could not be life or growth in animals.—P. A. Fish.

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Vitamins are absolutely indispensable to life and plants alone can produce them. The animal body does not possess this function, although it may store the vitamins for a time in certain of its tissues and even pass them on to its offspring through its milk.—P. A. Fish.

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If thyroid be fed to tadpoles in very early stages, frogs no larger than flies can be produced. If the thyroid be removed, a young tadpole will not metamorphose into a frog but will grow beyond the usual size of a tadpole and live a long time.—P. A. Fish.

A chilled lamb should be immersed in a tub of blood-warm water and immediately afterward well dried by giving it a thorough rubbing with woolen cloths. Feed it, wrap it warmly, but with the nose exposed, and put it in a warm place until it is vigorous and lively. Do not keep it away from its mother longer than necessary. Spirits of camphor may be given as a stimulant.—Hadley and Beach.

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Contrary to popular opinion, the hog is naturally a clean animal. In far too many cases he does not have the chance to keep himself clean, but when given the chance he is quick to avail himself of the opportunity. Light, cleanliness and ventilation will be found to pay just as big profits in swine production as in any other branch of the livestock business.—Hadley and Beach.

**Office of Dr. W. J. Ratigan's Dog and Cat Hospital at New Orleans, located on historic Esplanade Ave., in an old mansion where once were entertained many of the celebrities of the old South. Dr. Ratigan's assistant, Dr. Harold Nolde, states the opinion of many at first seemed to be that the hospital would be a detriment to the surrounding property. But objections to locating there were overcome, and the establishment is conducted in such a manner that it has met with the approval of the community.**

# Veterinary Events of 1924

During the year there was a further decrease of horses in cities. In Chicago this amounted to about 10 per cent. There was an increase in the number of dairy cows in the country, while the number of pigs farrowed in the spring was less than the year before.

There was an increase in poultry practice among veterinarians, and interest in poultry diseases was shown by the fact that at fifty-one association meetings, short courses and conferences reported during the year, 25 or about 50 per cent included papers or clinical demonstrations in poultry practice.

A growth of interest in canine practice was also shown at veterinary meetings, and many new small animal hospitals were erected in cities and towns all over the country.

The U. S. Bureau of Animal Industry was 40 years old on May 29, 1924. At present the bureau has more than 5,000 employees, about one-third of the number being veterinarians.

The year marked the holding of the record meeting of the A. V. M. A. at Des Moines, Iowa, in August, this being the 61st annual meeting of the association. The attendance of men was nearly 900, and the women numbered approximately 200. The literary program and clinic were exceptionally good. At this meeting a definite policy was adopted by the association governing its attitude in veterinary matters.

After more than 30 years of existence, the Indiana Veterinary College closed its doors early in the year. This leaves only eleven recognized veterinary schools, all state institutions.

In eleven colleges in the United States and one in Canada, the total enrollment of veterinary students was 592, with 164 first year, 123 second year, 147 third year, 141 fourth year, and 17 special students

The deaths of six prominent veterinarians, widely known among the profession, occurred in 1924.

Dr. Leonard L. Conkey, founder of the Grand Rapids Veterinary College, inventor of the equine operating table and hopples, died June 6th.

Dr. Fred Torrance, of the Ontario Veterinary College, formerly Veterinary Director-General of Canada, died June 29th.

Prof. Septimus Sisson, veterinary anatomist, Ohio State University, died July 24th.

Dr. Duncan McEachran of McGill University, died October 13th. He was the last of the four pioneers of veterinary education on this continent, the other three being Law, Liautard and Smith.

Dr. John H. Blattenberg, Lima, Ohio, died November 12th. Dr. Blattenberg was one of the most widely known practitioners in America

Dr. M. H. McKillip, Chicago, Ill., founder of the McKillip Veterinary College, and well known as an educator, surgeon and practitioner, died December 20th.

Important veterinary books published during the year were as follows:

*Tubercle Bacillus and Tuberculosis in Man and Animals,* by Albert Calmette, Pasteur Institute, Paris. English translation by W. B. Soper, M. D., and Geo. H. Smith, M. D.

*Military Meat and Dairy Hygiene,* by Capt. Horace S. Eakins, V. C., of the Medical Dept., U. S. Army.

*Veterinary Materia Medica and Therapeutics,* by E. Wallis Hoare. Fourth edition revised by Prof. J Russell Greig, M. R. C. V. S.

*The Bureau of Animal Industry, its Establishment, Achievements and Current Activities,* by U. G. Houck, B. S., V. M. D., and other members of the Bureau staff.

*Medical and Veterinary Entomology,* by Wm. B. Herms, University of California, 2nd edition.

*The Early History of Veterinary Literature and its British Development,* by Major-General Sir Frederick Smith. Vol. II published as a supplement to The Veterinary Journal, London.

*Surgical Diseases of the Dog and Cat,* by Frederick T. G. Hobday, F. R. C. V. S, 3rd edition.

**Diseases**

Foot-and-mouth disease made its appearance in California on February 20th. The outbreak spread to some 15 or 16 counties and involved a public expenditure of about $5,000,000 before it was suppressed. No sooner was the California outbreak checked than the disease was reported in Texas, having been discovered near Houston on September 27th. This latest outbreak was confined to a few counties and was stamped out in a comparatively short time. The latter occurrence of the disease constitutes the eighth outbreak in the United States, previous ones having taken place in 1870, 1880, 1884, 1902, 1908, 1914 and the California outbreak early in 1924.

Anthrax was unusually severe in the South during the year, extensive outbreaks being re-

ported in Mississippi, Tennessee, Arkansas, Louisiana and Texas.

An increase of sarcoptic mange in swine was reported in April by Dr. A. T. Kinsley, who called attention to the extensive damage this condition causes to pork products, it being estimated that the presence of mange costs the producer 60 cents for every hog sold to the packer.

A new lung disease in foxes was reported by Dr. Geo. A. Jeffreys of Detroit, Mich. The malady has symptoms somewhat similar to distemper but is thought to be a different disease. The course of the sickness is from two to four weeks, and the mortality is high. An organism was isolated, resembling the influenza bacillus. Dr. F. N. Steele of Muskegon, Mich., stated that he obtained good results in treatment with a bacterin prepared from diseased animals.

Hemophilia in milk cows was described by Dr. S. L. Stewart of Olathe, Kansas, in September. Hypodermic injections of adrenalin chlorid were used for treatment in four cases with satisfactory results.

Dr. Hubert Schmidt, of the Texas A. & M. College, reported that "loin disease" or "down in the back," a disease peculiar to cattle in the coastal region, is identical with the malady in South Africa known as lamzeitke and described by Sir Arnold Theiler as being due to eating bones containing putrid products, this abnormal craving resulting from a lack of phosphorus in the feed. The remedy recommended is to feed cattle sterile sweet bone meal.

Porcine orchitis as a sequel of vaccination was reported by Dr. A. T. Kinsley. One instance was cited in which a carload of boar pigs were vaccinated and practically every animal developed orchitis within a few days after vaccination. This condition would be quite serious in breeding animals. The exact cause had not been ascertained. But the orchitis in most cases occurred in pigs in which the serum was introduced into the the axillary space and the virus in the subcutaneous structures in the flank region. The opinion was expressed that this might indicate the possibility of secondary infection in the virus, capable of producing an inflammatory disturbance in the lymphatic structures, extending to and involving the sexual gland.

A case of Malta fever in the human was reported, from which an organism belonging to the abortus group, apparently of bovine origin, was isolated.

Field observations by federal veterinary inspectors brought out that tuberculosis in poultry is an important source of similar infection among swine. Losses from tuberculosis in swine were found to be considerable. Of a total of 232,678 dressed hog carcasses condemned for various causes, nearly one-half were rejected on account of tuberculosis. In addition to the 100,110 whole carcasses, there were 1,099,253 parts of hog carcasses condemned because of tuberculosis.

Dr. J. R. Beach, of the California experiment station, reported that the nutritional disease resembling roup among poultry, which has caused extensive losses in that section for a number of years, has been determined to be due to vitamin A deficiency. Cod liver oil or green food such as lawn clippings, proved preventives of the trouble. When green food is not available, the author thinks that the use of yellow corn and buttermilk in the ration will give satisfactory results.

During the early fall, shippers of live poultry became considerably alarmed over what they termed a new disease that was occasioning large losses in birds shipped to market Dr. Kaupp described this disease as a type of pneumonia of unusual prevalence and severity. This disease is still prevalent among chickens shipped to Chicago and eastern markets.

A report of an outbreak of paratyphoid dysentery in lambs made at the Des Moines meeting of the A. V. M. A., by Dr. I. E. Newsom of Colorado, appears to be the first published report of paratyphoid infection in sheep. 1,946 of 31,369 sheep, or 6.2 per cent of the exposed animals, died of the disease. A predisposing factor was hardship incidental to delayed shipment and exposure to inclement weather.

At the A. V. M. A. meeting at Des Moines, Hadley, Warwick and Gildow of Wisconsin, reported the finding of prenatal infestation of fox pups by the larvae of Belascaris marginata. This ascarid is one of the worst enemies of the fox industry and is responsible for the loss of many fox pups. The discovery that the pup may be infested in utero shows that not only must the newborn and older fox pups be guarded from infestation by the common roundworm, but the vixen should be freed from Belascaris before being bred and guarded from infestation throughout the period of pregnancy.

### Outstanding Discoveries and Reports of Treatments

Early in the year, Dr. W. H. Boynton, then with the Philippine Bureau of Agriculture and later with the University of California, claimed the discovery of a vaccine for hog cholera. However, there have been no further reports in the matter.

Dr. Frosch and Dr. Dahmen, of the Hygienic Institute of the Veterinary High School of Berlin, announced the discovery of the foot-and-mouth disease organism, April 7, 1924 The discoverers used a method of taking photographs with invisible ultra-violet rays and were thus able to identify the organism. This discovery has not yet been confirmed.

Besredka, of the Pasteur Institute, Paris, advanced a new theory of immunity, according to which immunization is effected by the introduction of the protective agent through the same route or tissue in which the virus is introduced in natural infection. Thus, it was apparently demonstrated that anthrax bacilli can be introduced with impunity into the peritoneal cavity, trachea or other tissue of the guinea pig, provided the skin is not broken. According to the theory, in the case of anthrax, the skin is the vital point of injury and infection with the B. anthracis. Likewise, it is assumed that an immunity to anthrax can be produced only when the antibodies or vaccine is induced into the skin. On the same lines of reasoning, it is assumed that typhoid vaccination would be more effective by ingestion of the vaccine or antibodies.

The treatment of equine influenza with chlorin gas, giving favorable results, was reported by Lieut. C. S. Williams and Lieut. F. H. Woodruff in the Army Veterinary Bulletin in April. This method had been suggested by the success attending the use of the gas in common colds and other respiratory infections of man. A test of chlorin gas in the treatment of shipping fever at the Chicago stock yards indicated it was of little value as there used.

The control of stomach worms of sheep by the use of copper sulphate solution was reported on by Dr. E. M Nighbert, of the B. A. I., at the Missouri Valley Veterinary Association meeting, St. Joseph, Mo., February 19th. The work on which the conclusions were based covered several years of investigation and experiment. It was demonstrated that the systematic use of copper sulphate solution not only holds the stomach worms in check, but they are completely controlled and in most instances disappear. The solution also has a decided effect in expelling tapeworms. The solution is made by dissolving one pound copper sulphate in two quarts of boiling water. This is the stock solution, of which four fluid ounces are poured into three quarts of water, making a 1 per cent solution.

The development of a potent immunizing agent (natural aggressin) against hemorrhagic septicemia by the use of highly virulent strains of organisms obtained from buffaloes, was reported by Wm. S. Gochenour, Pathological Division, B. A. I., during May.

At the Harvard Medical School was reported the discovery of a substance in normal horse serum that was successful in the treatment of pneumonia. It was stated that under ordinary conditions, this preparation could be expected to save 50 per cent of the pneumonia cases that otherwise die.

Dr. A J. Peterson of Lindsborg, Kansas, gave a treatment for "summer mange" in horses, which he has found successful in his practice, the formula being as follows:

| | |
|---|---|
| Lac. sulphur | ℥ 1½ |
| Oil of tar | ℥ 2 |
| Creolin | ℥ 1 |
| Ol. gossypii qs | O 1 |

M. Sig. Apply to affected parts with brush or cloth once daily.

Dr. B. T. Hopkins, Lake Worth, Fla., announced a treatment successful in his practice for cows that are down and unable to rise, whether from post-partum paralysis or other causes. He administers 3 tablespoonfuls of powdered nux vomica with 60 grains calcidin every four hours until four doses have been given; then the same sized dose every six hours for four more doses. Adjuvant treatment is, of course, important, also bacterins where indicated, and sulphocarbolates.

Dr. J. A. Janelle, Sherbrooke, Quebec, reported on his treatment for indigestion in horses, which he has used for 18 years with a high percentage of success. The prescription is as follows:

| | |
|---|---|
| Barium chlorid | ℥ 2 |
| Strychnin sulphate | gr. 2 |
| Lobelin sulphate, 1/10 gr | 2 tablets |
| Boiled water | lb. 1 |

Dose: 2 c.c. intravenously; 10 c.c. 30 minutes after the first dose; 10 c.c. 60 minutes after the second dose.

Dr. J. F. Callison, Moweaqua, Ill., described a unique method of intestinal anastomosis in pigs, wherein after he cuts out the strangulated portion of intestine, he inserts a one-ounce cap-

sule and sews the two ends together over the capsule, using silk or catgut.

A new treatment for actinomycosis was presented by Dr. H. J. McCartney at the Missouri State Veterinary Medical Association meeting at Excelsior Springs, June 25th. He injects 5 mils of formalin (40% formaldehyd) into the lesion, taking care not to permit the escape of the formalin into the surrounding tissue. In 15 or 20 days the swelling has subsided and the lesion become smaller and denser It is then removed by making an incision through the skin and breaking down the remaining attachments. The capsule of the lesion is leathery and dense and there is no pus, therefore, no danger of infecting the surroundings. The method, of course, is applicable only in those cases in which the lesion is definitely encapsulated and has not broken and is not discharging pus.

Dr. W. H. B. Aulgar of Preston, Ill., advocated a new treatment for azoturia at the meeting of the Illinois State Veterinary Association, Springfield, July 9th. This consists simply in the administration of chloral hydrate through a stomach tube. He gives six ounces. It puts the horse to sleep and when he wakes up he is well in the majority of cases, according to Dr. Aulgar.

Dr. H. W. Wilson of Helena, Ark., at the meeting of the Arkansas Veterinary Medical Association at Little Rock, June 28th, described an effective treatment for necrotic dermatitis in horses and mules. This treatment had been used by Capt. James R Mehaffy at Ft. Sill. The dead and diseased tissue of the foot is removed and the parts scrubbed with vinegar, after which the affected feet are treated with vinegar baths for 30 to 60 minutes twice daily. The following is then painted on the wound 3 or 4 times a day:

| | |
|---|---|
| Methylene blue | dr. 2 |
| Glycerin | oz. 3 |
| Formaldehyd | oz. 1 |
| Alcohol | oz. 8 |
| Aqua qs. ad | pt. 2 |

In practice, Dr. Wilson has used sawed off barrels for the horse's feet in applying the vinegar bath.

Dr. W. Eason of Watrous, Saskatchewan, reported a treatment for navel ill that he has found very effective in his practice. The colt is restrained and the navel cord cut off within about one-half to one-fourth inch of the abdominal wall. A probe is inserted to find the direction of the opening, then a blunt pointed, curved bistoury, and a slit made backward about one-fourth inch. The pus is evacuated and a curette used to clean up with, removing any dead tissue. The wound is cleansed with boracic acid solution twice a day. Internally, a purge of aloes is given, followed 4 times a day with dram doses of fluid extract of echinacea in a little water, given as a drench. In 15 or 20 minutes the following prescription is given:

Quinin sulphate.....
Potassium acetate....aa 10 to 12 grs

A simple and effective treatment for ear canker in rabbits was described by David Marine, of the Montefiore Hospital, New York, in "Science," August 15th. The experimental rabbits of the institution had been affected with ear mange and in casting about for some quick remedy, kerosene was tried, being sprayed into the ear with an atomizer. The ears were sprayed twice with an interval of six days. At the end of two weeks all the rabbits treated were cured.

Dr. J. R. and E. A. Shikles of Dearborn, Mo., during July, placed on the market an appliance to lessen the work and increase the convenience of vaccinating hogs. The appliance consists of a rubber container in which the serum is placed and corked air tight. This is connected to the handle of the syringe by a flexible rubber tube and the syringe fills through the plunger. In this way, it can be filled more rapidly than through a needle, and the serum is at no time exposed to contamination by air or dust.

An interesting case of cesarean section in a cow to deliver a monster fetus, was reported by Dr. W. P. Bossenberger, Williams, Iowa, who performs this operation from the left instead of the right flank as has been customary. He states that it is much easier to push the rumen out of the way than a number of loops of intestine. Then, too, if the sutures should not hold as long as is necessary to allow union of the muscles, there is not apt to be a large hernia following, as the walls of the rumen are more rigid than are the loops of the intestine Dr. Bossenberger also incises the abdominal muscles instead of tearing them apart as is usually recommended. He states that incision is the most satisfactory, since when the muscular fibers are pulled apart, the duration of the operation is greatly prolonged and may mean the death of the animal.

Dr. J. Fergus Donnelly of Campbellton, New Brunswick, announced the successful treatment of open joint by the use of "puff ball powder" or Lycoperdon giganteum. He reported three cases of open joint wherein he had applied the powder to open synovial bursae, resulting in

stopping the discharge of synovia, with prompt recovery in each case. In addition to this local treatment, he gives internal antiseptics and keeps the animals quiet.

An improvement was announced in the production of canine rabies vaccine, one injection method, whereby this vaccine could be prepared from the central nervous system of dogs. This not only insures an effective product but lowers the cost, since the yield from dogs is considerably greater than from rabbits, from which the vaccine had formerly been prepared. Dr. S. Kondo of Japan, who has been investigating the control of rabies in dogs for the past seven years, reported on this method at a joint meeting of three New York associations at the Lederle laboratories, September 24th. He stated that in Japan since March, 1921, more than 200,000 dogs had received the rabies prophylactic treatment.

Lieut. Edwin K. Rogers, in the Army Veterinary Bulletin, pointed out the value of ichthyol in skin diseases, describing a case of tinea tonsurans in a mule, wherein three applications of a 25 per cent solution of ichthyol in glycerin produced a cure in ten days, after the case had obstinately resisted treatment with a number of other preparations.

Of interest to several practitioners was the report of Capt. H. H. Harz, V C., 122nd F. A., 33rd Div., Chicago, on the successful outcome of the formalin treatment in purpura as originally described by Dr. McDunn. Capt. Harz gave his patient 2 drams of formalin in 10 ounces of water injected into the jugular vein. The swellings on the muzzle, chest and legs receded over half in six hours, and complete recovery resulted in four days.

Dr. J. G Horning of Houston, Texas, has been very successful in adapting to small animal practice the appliances and methods used by practitioners of human medicine. Early in 1924, he described the advantages and method of taking the blood pressure of canine patients; also the process of lavage and gavage in canine practice. More recently, he has reported on the use of bronchoscopy and esophagoscopy in dog and cat practice.

Dr. Geo. W. Staggs, of Chehalis, Wash., reported on his method of correcting torsion of the uterus in cows, whereby instead of rolling the animal, he makes an incision in the flank sufficient to introduce his arm, grasps the uterus and rotates it to reduce the torsion. He states this method is more satisfactory than any of the others usually employed.

In October an editorial in the Veterinary Record (London) suggested the anastomosis of the recurrent laryngeal and a portion of the phrenic nerve to correct roaring in horses, this operation having been employed with success in cases of laryngeal paralysis in man.

A Vienna veterinarian, O. Grasser, reported in a German publication that one injection of neosalvarsan generally suffices to cure anthrax. He treated 54 cases, of which two died and the others were cured.

Dr. A. T. Kinsley called attention to the prevalence of tail snapping in pigs. Dr. C C. Glendinning of Clinton, Ill., related his experience with this habit among a herd of hogs owned by him. He found he was able to stop the habit by feeding the hogs horse meat.

Drs. J. G. Horning and A. J. McKee of Houston, Texas, gave an account of their experience with the so-called "fright disease" in dogs, which they attribute to hookworm infestation. Carbon tetrachlorid was found to be effective in treating the condition. The opinion was given that the symptoms are a reflex meningitis produced by toxemia due to absorption of toxic material from the worms.

Dr. C. B. Hawes described the following preparation, which he has found very satisfactory in poultry diseases such as fowl cholera, fowl typhoid, bacillary white diarrhea and internal parasites of fowls.

Iron chlorid solution.....1 lb.
Potassium bichromate .....5 oz.

Hot water to dissolve the potassium bichromate, then water q. s. to make one gallon

It is dispensed in pint bottles with directions to add to each pint of drinking water one teaspoonful of the mixture. He has also found the same preparation useful in treating cases of hemorrhagic septicemia in cattle together with vaccination, and for coughs in horses.

D. C. Kennard, of the Ohio Experiment Station, made public the results of experiments during the past three years in rearing chicks indoors. It was found that chicks could be successfully raised indoors if fed cod-liver oil or incubator eggs in the ration. It was recommended that cod-liver oil be fed at the rate of 2 pounds for each 100 pounds of dry mash. If it is desired to feed incubator eggs, they should be boiled and ground or chopped up and fed 20 or 30 per cent by weight with a dry mash. Heretofore "leg weakness" has prevented the

rearing of chicks indoors and therefore inclement weather has delayed the chick season in some parts of the country.

### B. A. I. Activities

It must not be inferred because activities of this organization are mentioned under a separate head that the writer regards the Bureau of Animal Industry as a thing apart from the veterinary profession as a whole. Quite the contrary is the case, but some of the work of the bureau, even some of the results of research work, is not published at all, or the publication is delayed for months. Several important papers were published by Bureau veterinarians during the year, and these and the work of foot-and-mouth disease eradication have been mentioned in the foregoing.

The number of veterinarians employed in the Bureau or connected with it is large in proportion to the whole number in the country, amounting altogether to nearly 7,500, of whom almost 1,400 are on the Bureau rolls and approximately 6,000 accredited for tuberculin testing.

TUBERCULOSIS ERADICATION: Sentiment for state-wide eradication work on tuberculosis has gained much in strength during the year Forty-eight counties were placed in the modified accredited area, which is an area in which there is less than one-half of one per cent of the cattle tuberculous. Certain of the packers pay a premium of 10 cents per hundred weight on hogs from modified accredited areas.

During the year there was developed and widely used a method of using a supplemental injection of tuberculin in applying the intradermal test. The second injection is made at the junction of the skin and mucous membrane on the vulva. It is regarded as a valuable check on the injection of the caudal fold.

The number of cattle tested by accredited veterinarians increased nearly 200 per cent over the number tested the preceding year, being about 440,000 for 1924. The Federal appropriation for paying indemnities was $400,000 greater in 1924 than it was in 1923. The total number of cattle tested during the year under the tuberculosis eradication project was approximately 5,820,000.

Adhering to the policy of former years, the Federal department has avoided any tendency toward compulsory testing; taking up the work only when the people of a community are united and earnestly desire the testing.

One hundred ninety-nine bureau veterinarians, 217 assistant state veterinarians and 172 county veterinarians, a total of 588, are employed full time on this work.

PATHOLOGICAL DIVISION: An attempt was made by the pathological division of the bureau to treat animals that harbored abortion infection in their udders or elsewhere in an effort to free them of the infectious bacteria; i. e., the Bang bacillus. Abortion bacterins (killed B. abortus organisms) were repeatedly administered. After nearly two years' observation, the treated lot of animals showed such a slight difference from the control group that no beneficial effect could be claimed for the treatment. Sixteen infected cattle were used in the experiment.

During the year over three-quarters of a million doses of hemorrhagic septicemia bacterin were made and furnished to various co-operating stockyards where shipper cattle were treated with the idea of decreasing losses from this disease while the animals were undergoing shipment. Over one-fourth of a million doses of anti-hemorrhagic septicemia serum were also furnished for the treatment of sick animals. Both products proved to be of some value, but taken on the whole, they were far from satisfactory.

Nearly five per cent of over 8,000 samples of blood serum tested for dourine were found to be positive for this disease by the complement-fixation reaction. The samples came from the old infected areas in the Northwest and Southwest.

HOG CHOLERA CONTROL AND SERUM VIRUS CONTROL. During the year 871 meetings were attended by Bureau inspectors engaged in the work of hog cholera control, at 722 of which they gave talks on the subject of hog cholera prevention; 29,443 farms were visited and 112,109 interviews were had with farmers, stockmen, veterinarians, commercial men and others interested in abating losses in swine. 3,686 postmortem inspections were conducted and 77,855 hogs were treated in demonstrating the value of serum and in assisting practicing veterinarians. 7,225 outbreaks of cholera were reported from various sources. 1,634 premises were quarantined in co-operation with state officials, and 847 were cleaned and disinfected under supervision of Bureau inspectors.

The number of hogs lost from cholera during the year aggregated 2,772,002 animals valued at over $27,000,000, about 4.25 per cent of the total number of hogs in the country. Iowa was the heaviest loser from hog cholera, and Rhode Island the lightest. The percentage of loss was

highest in Nebraska; 6.4 per cent of the value of all hogs in the state.

From January 1st to June 30, 1924, serum plants operating under a license from the B. A. I., produced 467,525,666 c.c. of anti-hog-cholera serum. This quantity is greatly in excess of that heretofore produced in the first six months of any calendar year, and except for the last six months of 1922, it is much greater than the quantity produced in any six months period in the history of serum production. The quantity of serum produced during the fiscal year, 1924, or from July 1, 1923, to June 30, 1924, was 879,420,591 c.c. This is a substantial increase over any previous year, and, except for the fiscal year 1923, has never been approached.

The increase in volume of anti-hog-cholera serum produced for the fiscal year in question was confined to the clarified product, while the quantity of ordinary defibrinated blood serum produced was considerably less than for the previous year. The quantity of clear serum made last year was 206,646,215 c.c., or about one-fourth of the whole quantity manufactured. The concentrated form of clear serum is constantly on the increase. A dose of 24 c.c. of this form of serum is equivalent to 30 c.c. of the unconcentrated product. On the basis of required dosage, when unconcentrated serum sells for 75 cents per 100 c.c., the purchaser is justified in paying 93¾ cents per 100 c.c. for the concentrated product.

As a result of tests made under B. A I. supervision, 3,500,000 cubic centimeters of serum in addition to large quantities of virus were destroyed owing to lack of potency during 1924. This represents serum enough to treat about 88,000 hogs, and had it been marketed, its use with virulent virus would undoubtedly have resulted in losses to swine raisers and started centers of infection in the communities where used.

ZOOLOGICAL DIVISION: Reports from all parts of the world indicate the increasing use of the carbon tetrachlorid treatment for hookworms in man. Records have been kept of the treatment of more than a million and a half cases with a high percentage of success. Carbon tetrachlorid has been employed (5 c.c. in capsules) together with magnesium sulphate at intervals of 3 to 5 weeks for a year in the treatment of gastrointestinal parasites in sheep and found very effective.

Conspicuous success, as mentioned elsewhere, has attended the practical experiments in the control of stomach worms in sheep, and it is expected that the results attained will be of great value. Gratifying progress has continued to attend the practical experiments in swine sanitation that have been carried on in McLean county, Illinois, for a number of years. Some experiments, of which the first series has been completed, demonstrate that pigs protected from exposure to infestation with worms and hog lot diseases thrive and grow much better than those exposed to such infection.

TICK ERADICATION: In 1906 there were under federal quarantine for cattle ticks 975 counties in 15 southern states. On December 15, 1924, there were only 253 whole counties and 20 portions of counties in quarantine in the ten states in which cattle ticks still exist. Of the 702 counties released from quarantine, 533 are believed to be absolutely tick free and producing a better grade of cattle than was possible under tick conditions.

In 169 released counties some tick infestation still exists in limited areas and are being held under state quarantine until the last tick is eradicated. It is difficult for one without practical experience to appreciate the problem of eliminating the last fraction of a per cent of tick infestation which persistently remains in the most inaccessible and difficult areas composed of dense swamps with a few open places or in areas partially under water. These few remaining cattle are hunted and killed as wild animals and the owners compensated from state or county funds. This condition is quite prevalent in coastal areas.

Texas has the largest number of counties still infected—98; and Florida is second with 53 counties still infected; with the difference, however, that Texas has 56 counties that have been freed of the tick and Florida has only one freed county.

### Army Veterinary Corps

REGULAR ARMY: The authorized strength remained as for the preceding year at 126 There was one vacancy at the beginning of the year. Two additional vacancies occurred by death, leaving the strength of the corps 123, which is at least 27 officers under the actual needs of the service. Because of insufficient funds, many profitable lines of service could not be undertaken, and sixteen small posts and detachments having government animals were without commissioned veterinary officers and had only a limited veterinary service rendered by noncommissioned officers under the direction of the surgeon of the organization.

The government animals numbered about 46,000 or 6,000 less than for 1923. The morbidity

and mortality rates have declined steadily since 1918, being 857 and 53 per thousand respectively in 1918, and 343 and 35 per thousand respectively in 1924. This decreased morbidity represents a gain of 543,137 days of service in 1924 over what it would have been had 1918 conditions prevailed, and a saving of 820 animals.

Thirty-three animals were lost from glanders; 38 from infectious anemia; 27 from anthrax; 30 from canker; and there were 14 deaths in 105 cases of lymphangitis epizootica. There were 420 cases of laminitis with 100 deaths (an animal rendered unfit for service by disease is destroyed and regarded as having died of the pathological condition). There were 1,868 nail pricks (exclusive of shoeing nails), causing 29 deaths. Deaths from wounds of all classes numbered 158, and from all traumatisms, 581.

Of the 123 officers in the corps, two were detailed to the Surgeon General's office, two in attendance at civil institutions, one in attendance at the cavalry school, four on duty with veterinary units of the R. O. T. C., seven in attendance at the Army Veterinary School and four as instructors, and three at the army veterinary laboratories. It is estimated that 35 per cent of the efforts of the corps are devoted to duties in connection with meat and milk hygiene.

An examination was held in June to fill the vacancies and four candidates presented themselves for examination.

VETERINARY O. R. C.: The veterinary officers in the Reserve Corps numbered 611 on June 30, 1923, and 865 June 30, 1924 Two hundred and sixty-nine new appointments to the corps were made. The losses numbered 15. For the year there were in the veterinary reserve corps two colonels, 18 lieutenant colonels, 59 majors, 212 captains, 212 first lieutenants, and 362 second lieutenants.

The ten states having the larger number of veterinary reserve officers were: New York, 77; Illinois, 66; Ohio, 59; Iowa, 53; Pennsylvania, 47; Kansas, 44; Wisconsin, 39; Missouri, 37; Texas, 33, and Minnesota, 31. Nevada, New Mexico and Rhode Island had none.

According to rank, the distribution among the states having the larger numbers was: colonel, New York, 1; Ohio, 1; lieutenant colonel, New York, 4; Pennsylvania, 4; Illinois, 3; major, New York, 9; Illinois, 8; Ohio, 6; captain, Pennsylvania, 19; New York, 17; Iowa, Massachusetts and Ohio, 14 each; first lieutenant, Illinois, 17; Kansas, Nebraska and Wisconsin, 14 each; second lieutenants, New York, 37; Ohio, 29; and Illinois, 27.

Two thousand additional officers are needed to bring the veterinary corps to its allotted strength.

## FATE OF VITAMINS IN THE BODY

On rations rich in all the known vitamins it has been found that A and D, the fat-soluble vitamins, are stored in the body in large quantities. The storage takes place chiefly in the visceral organs, particularly the liver and kidneys and is available for body use in the event of vitamin starvation.

During the periods of growth the body requirements for these vitamins are so great that very little storage takes place. Under vitamin starvation adults do not suffer from avitaminosis to the extent that growing individuals do.

The water-soluble vitamins B and C are stored in the body only in limited quantities.

Experimental evidence indicates that vitamins A and B are excreted by the body in the urine and other organ secretions. During the period of excessive vitamin consumption the blood becomes overcharged with vitamins and overflow results. What changes take place, if any, during the process of metabolism have not been determined.—Mo. State Poultry Exp. Sta.

A certain Maryland farmer owned two farms in adjoining counties. An outbreak of hog cholera occurred on one of these premises in September. Apparently not contented with one experience with the disease, he moved hogs from this place to his farm in the other county. From the howl he made regarding his hard luck over the last outbreak, it is probable he is now satisfied.—I. K. Atherton.

## ANIMAL PARASITES CAUSE OF HEAVY LOSS

Taenia saginata, the beef tape worm, Taenia solium, the pork tape worm, and Dibothriocephalus latus, the fish tape worm, all infect man. Belascaris mystax is a common parasite of the dog and cat and hence found in children.

Some of the arthropods are subject to disease quite fatal to man. Among these are ticks, transmitting relapsing fever and rocky-mountain spotted fever, lice which spread typhus fever, various mosquitoes whose bites cause malaria, yellow fever, dengue and filaria, and the flies especially in regard to sleeping sickness.—Animal Pathology Exchange, University of Illinois.

# New Suggestions on Swamp Fever Therapy

By C. H. Grunert, V. S., Fort Saskatchewan, Alberta

As far as our present knowledge regarding the therapy of infectious anemia or swamp fever in horses is concerned the veterinary profession frankly admits it is still lurking in a "terra incognita." During the past eight years many occasions were presented to me to deal with acute and chronic cases of this disease so that naturally the question of a successful treatment became a most vital one. The treatments resorted to have been, of course, entirely of symptomatic nature and restricted to palliative measures. Arsenic, silver and iron preparations, antipyretics and anilin-dyes were tried out either per os, subcutaneously or intravenously. In many instances the results obtained were most disheartening whilst in others they appeared to be satisfactory until ultimately, after two or three relapses during the following years, the fatal end came.

A. D. Emmett's publication, "The Vitamins and Their Relationship to Health and Disease," justified new hopes to combat this obscure disease, as the result of which a thorough study of vitamin therapy was entered into. The thought occurred to me that the inferior quality of feed in low and swampy lands where in this district the disease is mostly prevalent, might lead to vitamin insufficiency, thus creating a predisposition for swamp fever infection. Be it understood, however, that swamp fever is by no means an avitaminosis.

Consequently, five chronic field cases were put under a vitamin treatment during February, 1923, and consisting of daily administrations of P. D. Metagen per os. The results were highly satisfactory. All the animals showed a rapid improvement in their general habitus and appeared to be in perfect health at the end of July, 1923, when they were removed to different parts of the country and escaped further observation. No animal inoculations had been carried out to determine the virulence of the blood.

A cheaper substitute for Metagen was found in Fleischmann's yeast which, as we know, is extremely rich in vitamin B, the vitamin most closely connected with metabolism, growth and health and the absence of which both in young and old animals produces symptoms of general debility, loss of appetite and vigor, emaciation, lowered resistance to disease and paralysis. Fleischmann's pure dry yeast was given to three field cases. The two older animals showed remarkable improvement after a comparatively short time and were in excellent condition when seen several months later. The third case, a two-year-old colt, unable to rise without assistance, with a temperature of 104.3 F. and with an empty, dicrotic pulse of 98 per minute, died on the fifth day in spite of additional symptomatic treatment.

An intensive study of the "yeasts" seemed to disclose new channels altogether with regard to a swamp fever therapy and induced me to carry out some clinical experimental work, the "modus operandi" of which in connection with the results of my theoretically and practically conducted investigations is outlined in the following:

Yeasts are unicellular fungi belonging to the family of Saccharomycetaceae. They increase, in the majority of cases, by budding or gemmation, transverse division and asci-formation. They are from 1 to 2 microns in width and from 1 to 9 microns in length showing spherical, elliptic or elongated forms according to species, living modus, age of culture, etc., etc. The individual cell is surrounded by a double membrane. Besides being artificially grown for different commercial purposes, these interesting fungi are found to be wild growing on every continent. From observations made in different countries, especially Hansen, in Denmark, it is concluded that yeasts are abundantly found in the soils of orchards, gardens and vineyards and that their number diminishes in soils farther away from those places and that in the soils of beech, fir, pine, etc., their presence is still more scarce. Professor Lewis, of the Department of Botany of the University of Edmonton, Alberta, informed me that, during some investigational work in connection with his department within a radius of 50 miles of Edmonton, a large amount of material had been collected from sloughs, ponds, lakes, etc., and that, "Although an abundant bacterial flora was found, no specimens of yeast have been observed." The cultivation of swampy and wooded soils followed by the growing of cereals creates environments suitable to the mode of living of yeasts. Does it not seem to be a rather peculiar coincidence that yeasts do not exist in regions where swamp fever is observed and that with the ultimate

appearance of yeasts in such cultivated soils the disease diminishes and eventually disappears? Is it possible that a condition of antibiosis exists between yeasts and the swamp fever virus? Taking that condition, for the time being, at least, as an established fact, what explanation could we offer as the most reasonable one? The results of the persevering work of Pasteur, Hansen and Buchner, the three great pioneers of yeast study, assist us here to arrive at some satisfactory conclusion.

Yeast cells contain nucleic acid which is found in the cell nucleus and in the metachromatic corpuscles in such large quantities that this fact is taken advantage of in the commercial manufacture of nuclein. Nucleic acid is known to be the most essential of the natural defensive proteids of the body in so far as it increases the number of the leucocytes and promotes their phagocytic activity. Its presence raises the opsonic index

During their process of life, yeast cells produce a metabolic, volatile endotoxin which will pass through a porcelain filter and which loses its toxicity at 100 degrees C. Some investigators (Fernbach and Heydruck) have shown in their experiments that this yeast toxin possesses bactericidal power upon Bacterium coli, Bacillus aerogenes and Staphylococcus pyogenes aureus, and yeast has been successfully used in the treatment of acne, furunculosis and other pyogenic infections in man where autogenous vaccines had falied.

As has already been stated, vitamin B is present in abundance.

These three yeast properties are undoubtedly of great curative value, but they cannot be held responsible for a condition of antibiosis between the swamp fever virus and the yeast. There remain only the numerous enzymes to be considered, such as zymase, nuclease, invertase, enderokinase, etc., etc.

Enzymes are colloids of unknown chemical composition. Their presence is indicated only by their splitting action upon the highest organic compounds. One of their distinct features is their instantaneous action in small quantities upon substances to which they show a typical affinity, of which the metabolic processes of digestion for instance are sufficient proof. Some enzymes are known to oxidize protoplasm which constitutes bacteria or their toxins, which latter show a most complex but very unstable internal structure. The Bacillus pyogenes (s. Pseudomonas pyocyanea), for instance, produces a proteolytic ferment which has been isolated and used for the destruction of bacteria in vitro as well as for the solution of diphtheric membranes and the spraying of membranes in order to destroy the causal organism. According to some investigators, the phenomenon of phagocytosis is due to the presence of two enzymes and, after a micro-organism has been engulfed by a leucocyte, its destruction is entirely the result of enzymotic activity (endolysin).

The assumption that one or more enzymes of the yeasts have a typical affinity for the swamp fever virus, thus creating a condition of antibiosis, is quite feasible.

The question arises at once whether living yeast-cells may be introduced into the blood-circulation—the lodging place of the swamp fever virus—without injury to the organism. Although not pathogenic, certain characteristics of the fungus do not warrant such a procedure.

During life time, yeast cells secrete a mucilaginous substance which binds the single cells together into a net work, a condition similar to the agglutination of bacteria. Such a conglomeration of cells may easily lead to obstruction of capillary vessels, to thrombosis or embolism. Experiments have shown, furthermore, that the leucocytes prove to be most inimical to yeast-cells and that the latter become ingested during a lively process of phagocytosis Finally, yeast-cells require a large supply of oxygen for their maintenance so that the oxyhemoglobin would undoubtedly be deprived of its but loosely attached oxygen to be changed into methemoglobin.

In order to avoid such disadvantages it was decided to extract the readily water soluble enzymes from the yeast cells and observe the effect of this yeast enzyme solution in artificially infected swamp fever cases.

Several difficulties are encountered in the preparation of such an enzyme solution, namely the great elasticity and firm structure of the yeast cell wall and the easy destruction of enzymes by heat and chemicals.

The first obstacle was overcome by following Buchner's method of isolating zymase, which I modified to suit my purpose, that is to say, after a mechanical breaking up of the yeast cells the readily water soluble enzymes were washed out.

One ounce of Fleischman's yeast is mixed with two ounces of fine sterile quartz sand and one ounce of kieselguhr to which six ounces of distilled water were added. This mass is ground down in a sterile mortar with a very heavy pestle for many hours until the majority of the yeast cells appear to be broken-up, structure-

less masses in the hanging drop under the microscope. This extremely slow and most tedious task having been accomplished, the liquid is filtered through several layers of filter-paper and the filter product washed for half an hour with chloroform. After the chloroform has been allowed to settle down, the liquid is pipetted off and taken through a Berkefeld filter. The filtrate represents a perfectly clear, somewhat viscous liquid of beautiful Rhine wine color, of acid reaction, with a specific gravity of 1010. This yeast enzyme solution will, of course, also contain some of the other aforementioned yeast properties.

The following experiments were carried out:

**Experimental Horse No. 1**

Gelding, dark-brown, star, ca. 1000 lbs., 12 years old. Has been used at Fort Saskatchewan as delivery horse for the last seven years and known to me to be perfectly healthy. T. 99.3 F., P. 30, strong and regular, R 8. Urine test for albumin negative, hemoglobin test ca. 95.

On December 13th, 1923, 15 c.c. of swamp fever virus which had been supplied by the Dominion Veterinary Research Station at Lethbridge, Alberta, were injected subcutaneously and at the same time 15 c.c. of yeast enzyme solution were given at separate hypodermic injection. On February 21, 1924, another 15 c.c. of virus were injected and on March 31, 1924, another 15 c.c. of virus were given. Temperatures were recorded twice daily and have remained normal so far. Urine and hemoglobin tests were carried out once a week and have been always normal.

**Experimental Horse No. 2**

Gelding, bay, ca 1000 lbs., 4 years old, salivary fistula. This horse has been raised on a farm 3 miles from Fort Saskatchewan where swamp fever is not known. T. 99.4 F., P. 36, strong and regular, R. 12. Urine test for albumin negative, hemoglobin test 100.

Fifty c.c. of blood serum from experimental horse No. 1 were injected subcutaneously into this gelding on the 26th day of April. To date, no temperature reactions have been observed. Urine and hemoglobin tests normal.

**Experimental Horse No. 3**

Gelding, black, star, white hind legs, ca. 1250 lbs., 7 years old, both front feet affected with pododermatitis chronica. This horse has been raised on a farm 4 miles from Fort Saskatchewan where swamp fever is not known T. 100,2 F., P. 34, R. 12. Urine test negative, Hemoglobin test 95.

On January 4, 1924, 12½ c.c. of swamp fever virus from Lethbridge were injected hypodermically. The temperature which had been fluctuating between 99.2 to 100.2 F., rose to 101.3 F. on the 28th of January, 1924, the highest ever obtained. Pulse at that time 48, urine test positive, hemoglobin test 95. On the 25th day of August this horse received 100 c.c. of yeast enzyme solution subcutaneously. As this animal seemed to suffer a great deal during the last weeks on account of chronic laminitis, a blood abstraction was made and then he was destroyed. Post mortem examination showed only some slight subendocardial petechiae and some slight petechiae of the capsule of the kidneys, not mentioning, of course, the pathological findings of the front feet. 50 c.c. of the blood serum obtained on the 25th day of August were injected subcutaneously into experimental horse No. 2 without same showing any temperature reactions to date.

**Experimental Horse No. 4**

Gelding, bay, ca. 1000 lbs., 3 years old. T. 100.1 F., P. 36, R. 14. Urine test negative. Hemoglobin test 100.

On the 3rd of August, 1924, 50 c.c. of blood serum taken from experimental horse No. 3 were injected subcutaneously with the result that on the 23rd day of August, 1924, the temperature rose to 103.2 F., and on the 25th day of August, 1924, to 104 F Urine test positive. Hemoglobin test 100. On the 25th day of August patient received intravenously 100 c.c. of yeast enzyme solution (by using a neo-diarsenol outfit). The temperature took a steady drop on the following day, being normal (100.1 F.) on the 28th day of August and ever since. No inoculation test with blood from this horse has been carried out so far.

In addition to these experimental horses, two colts, one yearling and one two years old, ca., 30 miles north of Fort. Saskatchewan, both acute, prognostically most unfavorable cases, received with the owner's consent only yeast enzyme solution, one intravenously and the other subcutaneously, with the result that both of them died on the second and third day respectively. Symptomatic treatment had been withheld on purpose.

**Conclusion**

Yeast enzyme solution seems to possess immunizing properties which protect a horse against swamp fever infection and which may produce a cure followed by immunity in recent infections. Its application in cases where pathological anatomical changes of the tissues have

already taken place is useless and of no value.

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# War Gas in the Treatment of Disease

**By Clyde F. Rex**

Newspapers throughout the country not long ago announced that President Coolidge had undergone the so-called poison gas treatment for a severe cold and had benefited materially by the experience. To many persons, who heard of the chlorin treatment for the first time, this announcement was startling, but to officers of the Chemical Warfare Service there was nothing either remarkable or unexpected in the cure.

Months ago they had demonstrated to their own satisfaction that the so-called poison gases, many of which were used with terrible success during the World-War, were efficacious in the treatment of a number of human ailments. They knew, for example, that chlorin is a preventative or cure in a majority of cases of common colds, laryngitis, pharyngitis, bronchitis, whooping cough, influenza, rhinitis and pneumonia, and satisfied with the showing made, they already had turned to another field of endeavor. This new activity is the study of the effect of various gases upon the diseases common to animals.

It must not be supposed that research work in the treatment of human beings was abandoned. On the contrary, that work, under the direction of Colonel H. L. Gilchrist, of the Medical Corps of the War Department, is going on as before but other experts have been assigned to a study of the treatment of such serious animal scourges as shipping fever among horses, distemper of dogs, and even foot-and-mouth disease which raged for months in California with the loss of millions of dollars in live stock and the practical paralysis of interstate commerce throughout the western part of the United States.

Investigations by Chemical Warfare experts of foot-and-mouth disease were undertaken in co-operation with the Department of Agriculture. They demonstrated, according to Army officials, that chlorin is one of the most powerful of disinfecting agencies that can be used to advantage in cleaning up suitable places that have been contaminated. These experiments, however, are not yet completed, but will be continued until the subject has been exhaustively examined.

In the case of influenza, the first effort of the Chemical Warfare Service was crowned with success. An epizootic of the disease broke out among horses of the artillery brigade stationed at Fort Hoyle, Maryland, and within a few hours 40 animals were afflicted. In the hope that something might be done to check the epizootic, the commandant of the post sent to Edgewood Arsenal, where the principal laboratories of the Chemical Warfare Service are located, for a gas officer.

A large chamber, capable of accommodating a number of animals at one time, was made airtight, apparatus for releasing chlorin gas in proper concentration was provided, and the horses were subjected to treatment. Within three days the epizootic was at an end and the afflicted animals were pronounced cured.

In this instance, the horses were kept in the chamber for an hour on three successive days. The concentration of chlorin was in the proportion of one part of gas to 133,000 parts of air. The horses suffered no ill effects whatever from the treatment and those already afflicted showed marked improvement after the first day.

An attractive feature of the treatment is its cheapness. Chlorin can be generated at a cost so low as to be almost negligible, the amount required by an ordinary sized chamber for an hour's treatment being valued at only a few cents. The apparatus, too, is comparatively inexpensive, that used at Fort Hoyle having cost less than $20.00.

Gas Service officers look forward to the time when veterinarians will be equipped with the apparatus necessary for treating this disease, and will be able to give live stock owners the benefit of the service at a nominal cost. Since few horses grow to maturity without having distemper, the field for the employment of the treatment is believed to be virtually unlimited.

While it is true influenza among horses is not a highly fatal ailment, it frequently happens that the animal suffers permanent injury from its effects, and in many instances is so seriously affected as greatly to lessen its value. This has proved particularly true of racing animals, which often develop into "roarers" and become practically worthless for the track. The chlorin treatment, it is asserted, will obviate this development and thus save thousands of dollars to breeders of race horses.

Distemper is the most serious disease of dogs, and many a kennel of prize canines has been decimated by an epizootic of the disease. Indeed, so serious is the malady, that an organization of sportsmen recently has been formed in Great Britain, headed by well-known nobiemen of sporting proclivities, for the purpose of raising a fund of several hundred thousand dollars for the study and treatment of canine distemper. Appeals have been sent to dog-lovers in Britain and the United States for contributions, and already a considerable sum has been raised.

Confident as Army Chemical Service officers are that veterinarians shortly will be equipped with apparatus for administering the chlorin treatment to animals, they are even more certain that every hospital in the country and many practicing physicians will have as a part of their professional equipment the facilities for treating human patients. Three chlorin clinics have been operating in Washington for some months, and among the notables in addition to President Coolidge who have been benefited by the treatment are Secretary of War Weeks and more than a score of Senators and Congressmen. One of the clinics is located in the Capitol in order that members of Congress may have easy access to it. Another clinic has just been opened in New York City, and the health department of Chicago maintains a clinic where the chlorin treatment is given free.

Every case treated is carefully recorded, for officials realize the treatment is an innovation and are anxious to make certain of its results. Official tabulations of the cases of 931 patients suffering from common colds, laryngitis, pharyngitis, bronchitis, whooping cough, influenza, and rhinitis, shows that 665 or 71.4 per cent were cured; in all cases except that of chronic rhinitis, the percentage of cures was higher than 70 per cent. In addition to the 71.4 per cent cured, 23.4 per cent. were improved, leaving but 5.1 per cent. of the cases showing no change.

Even more remarkable is the fact that of the 665 cases recorded as cured, 547 received only a single treatment of one hour, the patient inhaling chlorin gas in a concentration of approximately one part of chlorin to 133,000 parts of air. In such a concentration no discomfort of any kind is caused the patient other than a slight smarting of the eyes.

In tests of 13 species of bacteria which were allowed to develop for 24, 48 and 72 hours, and which included the germs of typhus, dysentery, diphtheria, pneumonia and meningitis, all the germs were killed in two hours and fifteen minutes by a concentration of one part of chlorin to 100,000 parts of air.

Further tests, it should be remarked, showed that the effect on the human system of one part of chlorin to 133,000 of air was as certain in killing bacteria as one part in 100,000 on the glass plates where the various germs were propagated.

**Mustard Gás Beneficial in Tuberculosis**

That mustard gas is beneficial in the treatment of tuberculosis apparently has been completely demonstrated by the experiments conducted at Edgewood Arsenal under the direction of Army Medical officers. Guinea pigs inoculated with tuberculosis germs and subjected to a determined concentration of mustard gas apparently were rendered immune and all failed to contract the disease. At the same time, an equal number of guinea pigs inoculated with tuberculosis germs, but not subjected to the gas treatment, all contracted the disease.

As a result of the experiments with the flaming gas known as Lewisite, which was used extensively in the World War, army experts have evolved what appears to be an efficacious remedy, if not a cure for paresis and locomotor ataxia. Lewisite is composed of arsenic and acetylene gas. It was developed toward the close of the war and there was not sufficient opportunity to study all of its effects.

Subsequently, however, scientists have experimented a great deal with Lewisite and the effect of arsenic compounds upon the human system. These compounds, similar to those used in Lewisite, gas service chemists have proved, may be introduced into the human body in greatly diluted doses If introduced into an animal organ'zation in too strong concentration, they produce blindness, as has been demonstrated on guinea pigs and other animals in the experiments at Edgewood. Administered in the proper degree of concentration, however, they are said to have a remarkable effect in paresis and to give beneficial results in some cases of locomotor ataxia.

# Items of Interest to the Practitioner

By A. T. Kinsley

D. Van Der Maas reported the occurrence of blackleg in horses.

The flavor and odor of milk is not affected by feeding sunflower silage, according to a report of the experiment station of Illinois.

Becoming thin in flesh, anemic appearance of comb and wattles and appetite fairly good, are manifestations of ascarids in fowls.

The disinfection of dairy utensils by steam is most effective when provision is made for the application of steam for at least 30 seconds.

According to reports some Wisconsin swine breeders found it most profitable last year to harvest their potato crop with swine; that is, they hog up the potatoes.

Soft corn can be fed to swine and cattle provided other feeds are used. It is dangerous to feed soft corn in any quantity to horses. More protein is required with soft corn.

It is good practice to have the teeth of all horses examined at least once each year by a competent veterinarian. The usual defects consist of sharp points and elongated teeth that can be removed by floating.

Nederveen has demonstrated coccidia in the intestinal mucosa of apparently healthy cattle and suggests that such cattle may be considered as carriers.

Vaccinate heifers and cows, in herds where abortion is prevalent, about two months before breeding, to aid them in warding off the abortion infection.—Hadley.

A child may be born with measles, if the mother is having it, but a child born of a mother that has had measles during pregnancy is immune for several months.—Public Health.

The cause of nutritional disease resembling roup has been demonstrated to be a deficiency in vitamin A and according to Beach can be prevented by providing an ample quantity of green foods.

Mycetoma or madura foot, a disease in the human similar to actinomycosis caused by the actinomyces of subcutaneous nodules or tubercles may be successfully treated by the use of neoarsphenanim and mercurochrome, according to Dr. Andrain.

"Vaccination with living cultures should be applied only in herds in which abortion in the first pregnancy is frequent and in which cows freshly introduced abort the first or second calf"—Fitch & Boyd.

Chlorin solutions are, generally speaking, more efficient for the sterilization of milk bottles than steam. When steam is efficiently applied it is effective but there are many details, some of which are frequently overlooked and the treated bottles are not sterilized.

Tuberculosis and other diseases are sufficiently prevalent in fowls that the consuming public is entitled to an efficient inspection, to insure healthfulness and wholesomeness of the carcasses and products that are marketed.

Collar boils, sitfasts, curbs and spavins as well as dental disturbances constitute a group of conditions that can be profitably treated by the veterinarian during the winter season. Numerous cases of these conditions exist in every farm community.

Great care should be exercised in the ventilation of poultry houses because fowls eliminate

more moisture from the lung and less heat for each unit of live weight than any other farm animal. Dryness and warmth are essential for fowls.

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A foot maggot of cattle is more or less prevalent in the Philippine Islands. This parasite (Booponus intonsus) is parasitic only during the larval stage. The tissues adjacent to the hoof are invaded by these parasites and marked lameness results. The life cycle of the parasite is probably very similar to other parasites of this same group.

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Fowls are susceptible to avian tubercle bacilli but are relatively resistant to human and bovine tubercle bacilli, and guinea pigs are susceptible to human and bovine tubercle bacilli but are relatively resistant to avian tubercle bacilli. Inoculation of both fowls and guinea pigs is resorted to in identifying the type of tubercle bacilli and this is claimed to be a reliable method of classification.

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Koppanyi and Carlson have reported the successful transplantation of the eyes of rats. Experiments have been conducted in which it has been claimed that nerve tissues grew from the cut end of the optic nerve, penetrated a transplanted eye ball and established anatomic connections similar to those in the normal eye. No doubt, these experiments will be repeated by others.

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According to a recent survey covering over one hundred thousand farms, there has been a 6 per cent increase in the number of dairy cows in 1924 over 1923 in the United States. This is indicative of the tendency for an increase in the production of dairy products. An increase in the number of dairy cows favors the veterinarian.

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The per capita consumptions of milk and cream has increased nearly 12 per cent and butter approximately 6 per cent in the last decade. The largest per capita consumption of dairy products is in rural districts. The average per capita consumption of milk and cream is 53 gallons and of butter 16 pounds.

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There were approximately sixty million sheep in the United States in 1900. Because of adverse conditions, low prices, etc., the number of sheep was reduced from sixty million in 1900 to thirty-seven million in 1922. The predominating prices of both mutton and wool during recent months will stimulate sheep production. Many farmers are keeping a small band of sheep and practicing veterinarians are being called upon to care for various sheep ailments.

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Young animals that are growing rapidly require a liberal quantity of minerals especially calcium and phosphorus Stunting and underdevelopment are frequently a result of deficiency in minerals. Other nutrients can not be substituted for minerals. On the other hand mineral nutrients without other feeds will not suffice as a maintenance or growing ration.

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Eccles and his collaborators recently concluded an experiment that was designed to ascertain the advantage of adding vitamin B in the form of dried yeast to the ration of calves. Thirty-eight calves were used in the experiment, twenty received the yeast and eighteen were reserved as checks. There was no apparent difference in the rate of growth and the health of the calves receiving the yeast and the checks and therefore there is no advantage in feeding yeast to calves.

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Extra efforts are being exerted by the California Dairy Council to interest not only dairymen but also the consuming public in the value of tuberculosis-free herds of cattle. The sanitary measures that were resorted to in the eradication of foot-and-mouth disease, particularly cleaning and disinfecting, were of very great value in demonstrating the efficacy of such methods in the prevention and control of disease and thus a splendid beginning has been made in the educational campaign of tuberculosis eradication.

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Hemolymph nodes, which when normal vary in size from a pin-head to a mass as large as an ordinary cherry, are noticeably enlarged in cattle that have had tick fever. It may be that these glands remain enlarged as long as the piroplasma persists in the animal body. The tumefaction of these glands may be an indication of a protective reaction. These glands are enlarged in "east coast fever" and it may be that tumefaction of hemolymph glands is a manifestation of piroplasmosis.

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The butterfat production in California for the fiscal year 1923-24 will exceed the previous year by over five million pounds. This increase has been made during one of the most severe

droughts in the history of the country and in spite of the fact that approximately thirty thousand dairy cows were destroyed in the control of foot-and-mouth disease. The high production of butterfat by the dairyman in California under such handicaps as drought and foot-and-mouth disease evidences the fact that they are carefully selecting their cows on butterfat records, a splendid practice.

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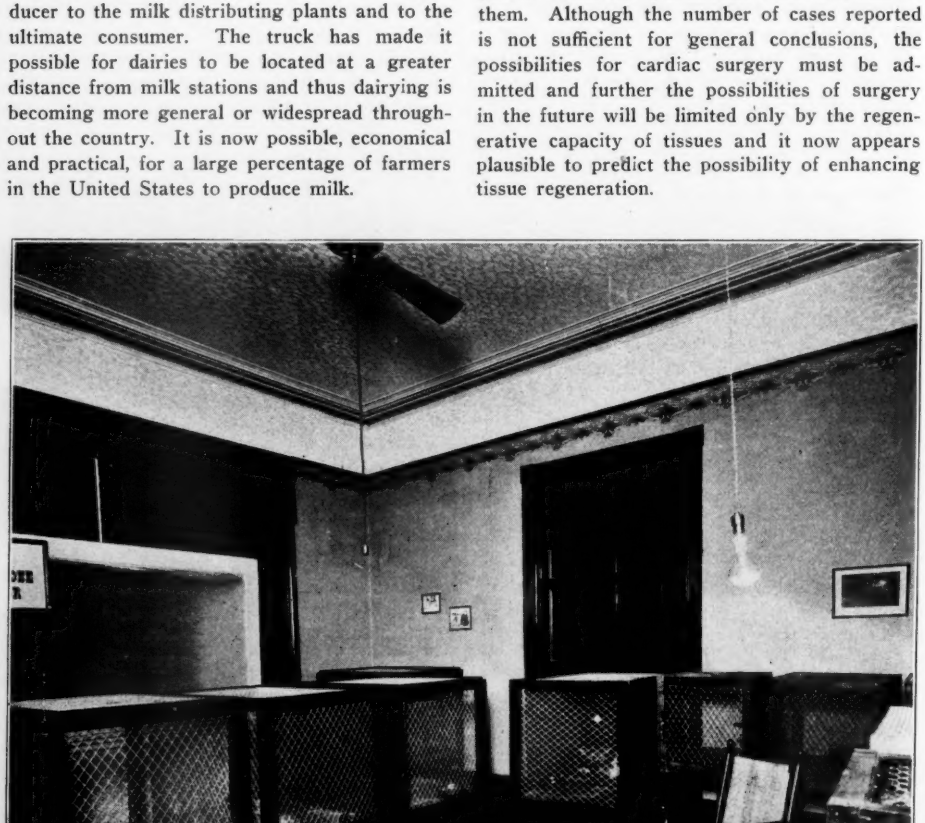
The motor truck in the milk industry has replaced many draft horses but the truck has been an advantage to the milk industry as it has facilitated the delivery of milk from the producer to the milk distributing plants and to the ultimate consumer. The truck has made it possible for dairies to be located at a greater distance from milk stations and thus dairying is becoming more general or widespread throughout the country. It is now possible, economical and practical, for a large percentage of farmers in the United States to produce milk.

Cardiac surgery has been largely restricted to the treatment of traumatic wounds until recently it has been reported that a method is being developed for partial valvulectomy to relieve mitral stenosis by Cutler, Levine and Beck of the Harvard Medical School. Treatment has been of little or no value in the relief of mitral stenosis, and surgical procedure based upon a foundation of experimental evidence of a technic developed by repeated operations on laboratory animals seemed justifiable. Four patients have been operated upon without any serious results from the operation and an apparent relatively permanent relief in one of them. Although the number of cases reported is not sufficient for general conclusions, the possibilities for cardiac surgery must be admitted and further the possibilities of surgery in the future will be limited only by the regenerative capacity of tissues and it now appears plausible to predict the possibility of enhancing tissue regeneration.



**One of the wards in Dr. W. J. Ratigan's Hospital at New Orleans**

# Poisonous Plants

By L. H. Pammel

## POISONOUS BLUE-GREEN ALGAE

There has long been a discussion as to whether the blue-green algae so common in our lakes are poisonous. Many years ago Dr. J. C. Arthur reported on some supposed cases of poisoning near Waterville, Minnesota, in which he came to the conclusion that these algae were not poisonous. The species he worked with was Gleotricha pisum which is one of the common species in Iowa and Minnesota. More recently Mr. George Francis of Australia, stated another species, Nodularia spumigera, was poisonous to stock. I have this to say in my Manual of Poisonous Plants:

"Francis says that, when animals drink the water, it acts as a rapid poison and causes death. It first produces stupor and unconsciousness, the animal falling and remaining quiet, as if asleep, unless touched, when convulsions come on, with head and neck drawn back by rigid spasms which subside before death. This, in sheep, takes place in from 1-6 or 8 hours; in horses, in 8-24 hours; in dogs, in 4-5 hours; and in pigs, in 3-4 hours. A post-mortem examination was made on a sheep that had 30 ounces of fresh scum administered by mouth, death occurring in 15 hours. The examination, 6 hours later, showed that the stomach had none of the green scum left, all having been absorbed; the abdominal cavity contained two pints of yellowish material; the heart was flaccid with effusion of serum around it; lungs, liver, kidneys, and brain normal; dura mater enlarged; blood of ventricles and arteries black."

There has come to my desk an interesting letter from Prof. L. M. Massey of Cornell University:

"Enclosed herewith I am sending you part of a letter received from Mr George E. Sanders regarding a possible case of poisoning from the blue-green algae, Anabaena circinalis. To my knowledge this plant has never been reported as being poisonous although it is one of the most common plants to be found in water supplies."

Mr. George E Sanders, Deloro Chemical Co., Limited, Deloro, Ontario, says:

"Here is a curious thing that I should like you to get me some information on. Some 19 head of cattle and one sheep died from the drinking of water from Fraser Lake, about 70 miles above here. No arsenic or inorganic poison could be found. Investigation by the Provincial health people showed an abnormal quantity of a plant Anabaena circinalis present in the water which they claim gave off a poison and killed the cattle. I have three bottles of the water, one of them about one-third full of the green water plant. It must be some poison, as a calf given some of the water died in 21 minutes and a dog eating into the poisoned animals died. What can you find out about this for me? What is the poison? How can the stuff be combated? Would a few pounds of copper sulphate do the trick as it does in the Croton reservoir? Would some of your associates like to examine one of the bottles of water and plants that I have? Is this plant known to be poisonous and is it common?"

This is interesting as it confirms the work of Mr. Francis.

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## CASTOR BEANS POISONOUS TO DUCKS

Dr. Charles Murray, Professor of Veterinary Investigation at Iowa State College, has sent to me the following interesting correspondence in relation to the poisoning of ducks Mr. Jacob Houser of Varina, Iowa, lost some ducks. The letter from Dr. Charles Murray follows:

"Doctor Rice has turned over to this laboratory your letter and the duck which you sent with the request that we examine the same and report to you.

"The history you give of your ducks is suggestive of two conditions, either poisoning of some type or duck septicemia. In the latter case it is usual to find the germs of the disease in the blood. We failed to demonstrate any in microscopic examination of the blood from this duck. The gizzard and gullet were both greatly over-distended with decomposed food. In this food were found a number of fragments of a bean-like seed which appeared to be the seed of the castor bean, and it is possible, if it is the castor bean, that these ducks might have been poisoned from consuming this, as the bean contains a very poisonous substance which is fatal when consumed in any considerable quantity.

"We cannot make any positive statement on the findings we have made, but suggest first that if there are castor beans growing about your place you remove these from reach of the ducks as it really looks like this might be the cause of the trouble. We should like to hear from you again whether these birds have had access to castor bean seed."

Mr. Jacob Houser, in response to this letter, wrote Dr. Murray as follows:

"Yes, the ducks had access to castor beans. In fact, I chopped down some plants and threw them into the pasture where the ducks were, not thinking of course that they would hurt poultry, and no other poultry but the ducks ate them. I am quite convinced it was castor beans that killed them. I wish to thank you for the trouble of examining the ducks and reporting to me."

I am always interested in matters of this kind Dr. Murray has stated that the seeds contain a very poisonous toxin, the ricin. In my Manual of Poisonous Plants, is the following:

"The seeds furnish the well known castor oil which is a mild and safe purgative. It contains ricinolein, or ricinoleic acid glycerid, $C_3H_5(C_{18}H_{34}O_3)_3$ an acrid principle; also palmitin, stearin, and myristin. The purgative principle found in it is unknown. Castor oil is not poisonous, but the pulp contains an acrid, albuminous substances, ricin $C_8H_5N_2O_3$. Dr. Winslow, in speaking of the poisonous character, says, the seeds 'contain 50 per cent of oil, and an acrid, poisonous substance. Three seeds have caused death in man, and they are ten times more purgative that the oil.' A few seeds eaten entire by a child might produce serious symptoms. According to Chestnut, the seed eaten accidentally by horses has caused death. They are used also to poison sheep, according to the same authority"

Other members of the spurge family are poisonous.

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Obviously extension work within the state is for the dissemination of information and must be educational in character.—T. E. M.

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Blueberries appear to have some detrimental action on intestinal parasites in children, especially the oxyuris; at least, Nyberg found that children infested with oxyuris who consumed quantities of blueberries were relieved of those parasites.

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A county agent who presumes to practice veterinary medicine or attempts to teach farmers to do so can scarcely hope to be on good terms with and receive full support of veterinarians. The regulatory official who attempts to practice outside of devising methods of improving livestock and poultry, prevention, control and eradication of transmissible animal and poultry diseases, and milk and meat hygiene, likewise becomes a trespasser and can not hope to maintain the good will and receive the unstinted support of veterinary practitioners.

—T. E. M.

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Free governmental service should be curtailed rather than extended. The public should employ and rely more upon local talent for service. Such service should be paid from private rather than from public funds. Many farmers have the idea that they are getting something for nothing when county, state, provincial or federal inspectors tuberculin-test their herds or county agents vaccinate their hogs, or when these agencies perform other work. So-called "free service" comes from public taxation and is usually expensive.—T. E. M.

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In a series of studies of the vitamin potency of codliver oil, by Holmes, it was found that the oil obtained from emaciated fish may be potent in vitamin A but the oil obtained from cod fish that were plump and in good physical condition had a higher potency in vitamin A. Thus it will be noted that there may be sufficient variation in codliver oil to explain the apparent variation in results of this product when used as a medicament. There is no reliable method for standardization of codliver oil on a vitamin basis at this time and the possibility of variation should be kept in mind.

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It is now almost universally conceded that a variety of mineral substances are required in the diet of farm animals to build up the normal tissues, repair, and to serve in metabolic processes. The grains and hays grown on some soils possess sufficient minerals to supply the normal demands but some soils are deficient in certain mineral elements and feeds grown upon such soils should be supplemented with the proper minerals. The use of a composite mineral supplement where only one or two minerals are required is not good practice and tends to indicate a failure in specific diagnosis.

# Common Abdominal Diseases of the Domestic Fowl

By B. F. Kaupp, Poultry Investigator and Pathologist, North Carolina State College, Raleigh; Author Animal Parasites and Parasitic Diseases, Poultry Diseases, Anatomy of the Domestic Fowl, Poultry Culture Sanitation and Hygiene, Essentials of Poultry Raising

It is the intention in this article to take up only those diseases of the abdominal cavity of the fowl that are commonly met with in practice and to present a mental picture in the mind of the practitioner, of the bird as it appears in the flock, what one expects to see on postmortem examination and what can be done, if anything. It is quite true that many times there is nothing we can do to aid in recovery and the most of the diseases discussed in this article are incurable but the owner, I find, often wishes to know what the trouble is and whether it is of a contagious nature and whether the balance of his flock are likely to take the malady.

### Chronic Peritonitis

Chronic purulent peritonitis is quite often met with among heavy laying hens, and especially the hens that are in their second or third laying years. Some of these birds continue to go on the nest having the feeling or desire to lay, even after the ovary has become quiescent and the oviduct has shrunk in size to a non-functioning state. In the latter stages the bird may show a partial loss of appetite and unthrifty appearance with withered comb and rather pale face but she usually dies in fair condition of flesh and with considerable retroperitoneal fat.

Upon opening the fowl there is noted scattered over the abdominal viscera and especially the intestines more or less pus of a creamy or yellowish color and of a cheesy nature. It will also be noted that the ovary and oviduct have long ceased to function as shown by their shrunken appearance.

In regard to causes, it might be said, that at least a part of them are due to infection. We have isolated in these laboratories the Streptococcus pyogenes from some of the cases of abdominal purulent conditions. In one case a bacillus, rather short and thick, was present, apparently in pure form, and from this a pure culture was secured from the primary inoculation of medium. The work of reproducing the condition was never completed

### Purulent Inflammation of the Air Sacs

Purulent conditions of the abdominal air sacs are perhaps more common than of the seven other air sacs. The abdominal air sacs, two in

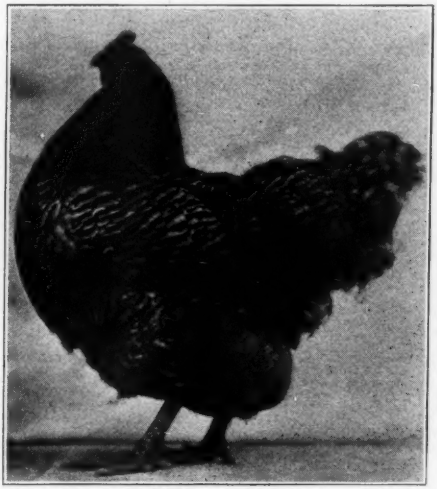

**Fig. 1. A Barred Plymouth Rock hen with abdominal ascites; 1100 c.c. ascitic fluid was drawn from this abdomen after the photograph was taken.**

number, have their origin from the bronchial tubes at the posterior edge of the lungs and extend backward, one on either side, of the abdominal cavity, with the abdominal wall on the outside and the visceral organs on the inside, and extending to the posterior quadrant. There are no extensions given off of either of these air sacs to the bones as from many of the other air sacs. The only extension is a blind cecal diverticulum extending toward the coxo-femoral articulation.

Today there came to autopsy, in our laboratory, a two-year-old Light Brahma hen suffering from an edema of the right abdominal air sac. The sac was distended with a serous appearing fluid, and was one and one-half inches in diameter and four inches long. On page 232

of third edition of "Poultry Diseases" there is related a study of a purulent inflammation of the right abdominal air sac. An accompanying photograph shows the thickened wall of the air sac and its roughened interior. In regards to symptoms of this bird, there seemed to have been no definite symptoms before death. The symptoms were those common to many maladies of birds such as a progressive dullness, more or less loss of flesh, sluggishness toward the end, and loss of appetite and finally death.

At postmortem examination, when the abdominal wall is dissected away, there appears a large, long, fluctuating tumor, lying at the side of the abdominal cavity. This fluctuates upon palpation or handling. The wall is thickened and when opened usually contains a liquid whitish in color and occasionally a flocculent material.

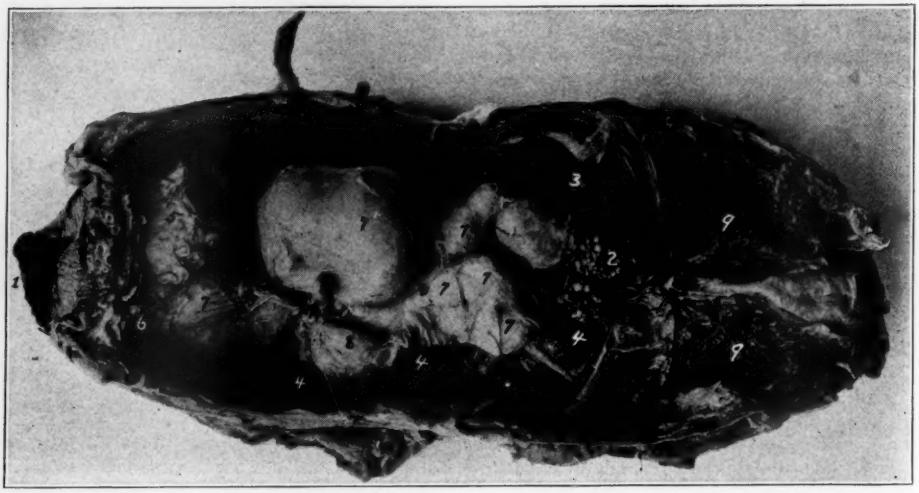


**Fig. 2. Pelvic organs of a hen with 9 arrested formative eggs. 1, ulceration of the anus extending forward and causing formation of cicatrix and stoppage of eggs; 2, the quiescent ovary; 3, blighted ova; 4, kidney; 5, rectum; 6, strictured oviduct; 7, arrested formative eggs; 9 lungs.**

### Abdominal Ascites

Abdominal ascites is by no means rare as shown by the autopsy records of the Poultry Pathological Research laboratories of the North Carolina State College.

Ascites is a collection of serous fluid in the abdominal cavity. Ascites proper is dropsy of the peritoneum characterized by increased size of the abdomen, fluctuation, and general signs of dropsy. It is rarely a primary disease, usually owing to obstructed circulation in some of the viscera or excitement of vessels of the abdominal organs.

Ascites may accompany cirrhosis of the liver, tuberculous peritonitis, general chronic peritonitis, organic heart disease, or chronic renal troubles.

According to their etiology there are five varieties of edemas, as follows: edema due to arterial congestion; edema from stagnation of the blood; edema caused by a hinderance of the outflow of the lymph; edema caused by a disturbance of the capillary secretions due to changes in capillary walls; and edema ex-vacuo.

In a review of 800 autopsies from the records of this laboratory 20 or 25 per cent were suffering from abdominal dropsy. The amount of fluid in each case varied from 25 c.c. to 11,000 c.c. Fig. 1 shows a typical case in a Barred Plymouth Rock hen. Note that the abdominal wall sags behind. The abdomen was tense and by succussion and palpation it could be definitely determined that there was liquid in the abdominal cavity. In the above case the ascitic fluid was removed and the cavity again refilled at the rate of about 15 c.c. a day. The more tense the abdominal cavity, however, the slower the extravasation of the fluid into the abdominal cavity.

### Abdominal Tumors

Cystic ovaries are quite common and especially among old hens. These cysts may originate in great numbers from the ovarian ovules and appear in great clusters and about the size of a boy's playing marble. Or they may con-

tain a cheesy material. Many times blighted yolks, which have been in the process of formation, are caused to form tumors by infection by the Bacterium pullorum. Hematomas of the ovary are also frequently observed. These may be globular and two or even three inches in diameter and contain a thin bloody liquid and at other times they may contain a more solid hemorrhagic material and be of different shape; some of them we have observed were ½ x 1 x 2 inches.

Abdominal tumors, involving other parts, are also observed The tumors attached to serous surfaces and one-half to one inch in diameter are by no means rare. Fibromas have been observed but they are not as common as in mammals. Recently we found a pediculated hard carcinoma. Carcinomas are rare in the fowl but sarcomas are common. Epitheliomas of the cuticular surfaces are commonly met with among fowls. In the case of the carcinoma mentioned above the pedicle was attached to the wall of the middle third of the oviduct.

**Retention in the Oviduct of the Forming Eggs**

One of the diseases quite troublesome to hens is the retention in the oviduct of eggs in the process of formation. An obstruction of the oviduct or egg canal is brought about by any condition that arrests the passage of the egg, during its formation. This is a common ailment of laying hens, perhaps the commonest of all discussed conditions of the oviduct. The poultry raiser knows this condition as "egg bound" by which is meant that there is something in the oviduct which the bird cannot force out.

The upper portion of the oviduct, or that portion which receives the ovum or yolk, as soon as it is fully formed in the ovary and delivered, is lined with secreting cells In this part the albumin which surrounds the yolk is formed. Further along the glands secrete the shell or calcium layer after forming around the mass the fibrous membranes or sacs. It can be readily seen, for all this to be brought about, there must be an abundant blood supply. An inflammation of the egg duct may be the result of infection from the digestive tract by way of the cloaca. Such inflammation means an arrest of function of these glands. There are other cells that secrete mucus which lubricates the passage way, and these too, are arrested in their function. The result is stoppage of the egg.

Other causes are: eggs of too large size, exhaustion of the bird and atony and paralysis

**Fig. 3. Egg with four membranes caused by egg being returned to ovarian pocket each of four times it reached the shell gland region of the oviduct.**

of muscular walls of the oviduct and vagina, volvulus or twisting and stricture of the oviduct. Weakened muscles, the result of disease, improper nourishment and overwork are contributing factors. Polypi of the oviduct have been observed once by us.

As to symptoms, the hen may frequently go to the nest and repeatedly make expulsive efforts but cannot lay. If the obstruction is well along in the egg canal the egg may be felt as a hard object in the posterior part of the abdomen. In many cases the obstruction is so far up the oviduct it cannot be felt or seen and we must depend on diagnosis upon the action of

**Fig. 4. A S. C. Rhode Island Red hen with accumulation of eggs in the abdominal cavity.**

the bird, which suffers acutely under these conditions.

To relieve egg bound, wash the hands, grease the index finger and gently introduce the finger into the oviduct. Great care must be taken lest one ruptures the oviduct, as the walls tear easily. If the egg is low, it can be brought into view and the egg shell punctured and then removed. Put the hen on a soft feed diet for a few days and in comfortable quarters to allow of her recovery before placing her with the balance of the flock.

If the obstruction is of a permanent nature and the load in the oviduct not relieved, then there may pile up a number of eggs, as is shown in Fig. 2 where there were nine eggs in the process of formation in the oviduct that were arrested. Finally, the ovary and oviduct ceased to function and the eggs that were lodged in the oviduct became inspissated

**Extra Abdominal Eggs**

The egg is divided into the yolk, the albumen, the shell membranes, and the shell. Each of these are formed in a separate part of the reproductive organs of the fowl. The yolk is formed in the ovary and when mature is discharged into the ovarian pocket. It is quite possible that there may be a rupture of the ovarian pocket and the yolk be discharged into the abdominal cavity. Or the yolk may pass through the funnel or first portion of the oviduct to the second portion or abumen secreting portion and then arrive at a point where the oviduct may be diseased and a reversed muscular wave carry the mass back again to the ovarian pocket and pass again down the canal or even be thrown into the abdominal cavity. In Fig. 3 there is shown an egg which traveled down the oviduct to the shell gland portion four times and finally after having four layers of albumen and as many shell membranes, then was passed to the abdominal cavity. Fig. 4 shows a picture of a hen with her abdominal cavity filled with eggs. More than a half dozen were piled out into the cavity after being pretty well formed before the ovary and oviduct ceased to function. They then became a cheesy mass partly being absorbed. That part which could not be absorbed will after a while undergo an organization. This hen sits upright similar to a penguin and when she walks she drags her abdomen on the ground.

## SUNLIGHT IN RELATION TO NUTRITION

Sunlight is a valuable adjuvant in poultry nutrition. Chicks may be raised to considerable size without the influence of sunlight when the vitamin contents of the ration is adequate. Should the vitamin A or D supply become low chicks raised in direct sunlight will do better and show less evidence of avitaminosis than will chicks raised in the absence of sunlight. In cases of leg-weakness and malnutrition best results are obtained when foods rich in these vitamins are supplied and the chicks are allowed daily sunbaths.—Mo. State Poultry Exp. Sta.

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Of the 44 primary outbreaks of hog cholera in Maryland during November, 31 were apparently due to infected pork in garbage, table scraps, etc. Five were caused by the introduction of new stock, while in eight cases it was impossible to get history on which to base the source of infection. Of the 19 secondary outbreaks, 11 were apparently due to permitting hogs to run at large, or moving swine from infected to well herds. Two cases were due to unburied carcasses, and in six instances no history could be obtained on which to base the source of infection.—I. K. Atherton.

I hear ten criticisms of my colleague's lack of business ways, lack of cleanliness and lack of proper place and system in his office and hospital compared with one criticism of his lack of ability. It is true that our profession is burdened, as all professions are, with a few that have but little above the ears, but it is rather unfortunate that so many of our capable men are so careless about the things the public can positively see and justly criticize.—DeVine.

## THE TUBERCULIN TEST IS A VALUABLE DIAGNOSTIC AGENT

Avian tuberculosis can be recognized by the intradermal injection of avian tuberculin in the wattle. One to two minims are placed in the layers of the skin with a 26-gauge needle. Chickens infected with tuberculosis give a local reaction, which varies from the size of a pea to a hickory nut. Often the injected wattle becomes edematous, with the maximum swelling gravitating to the lower part of the wattle. Other reactions are well circumscribed about the point of injection. Forty-eight hours after the chickens are injected with the tuberculin they should be examined. A few reactions prevail for three or four days, while others subside rapidly.—Animal Pathology Exchange, Univ of Illinois.

# Helpful Hints in Equine Practice

By L. A. Merillat

## STREPTOCOCCIC INFECTION SIMULATING GLANDERS

That a hasty diagnosis of glanders from clinical symptoms alone is an unwise practice is shown in the following case of a work horse, ten years old, presented at the writer's hospital for treatment during the month of February, 1916. The patient was submitted for the treatment of two angry looking pustules on the external face of the metatarsus of the right leg. They were soft, hairless and the size of a hazelnut and were five inches apart. There was a slight edema of the region, a fever of 102 degrees F., but no lameness. The hair around the pustules was trimmed off with scissors, the skin wiped with alcohol and the contents evacuated—a sanguineous liquid streaked with whitish pus.

Two days later a chain of pustules smaller than the first two appeared along the external face of the hock, and the temperature rose to 103 degrees F., with the patient showing some systemic indisposition—loss of appetite and injected mucous membranes. Towards the end of the first week, similar pustules began to appear on the internal face of the hock, whence they traveled up the leg in two chains.

Glanders now being suspected, the patient was submitted first to the ophthalmic test and then to the subcutaneous test. Both being negative, pus was obtained from newly lanced pustules. Smears made from the pus showed uniformly long chains of streptococci in pure cultures. A guinea pig, inoculated, died in ten days showing hepatitis and hemorrhagic mesenteric glands, and from cultures made from these organs, pure micrococci and diplococci were found. When these were again transplanted to bouillon, the cocci again arranged themselves in chains. Similar results were obtained with blood serum, but in agar they would not form chains, appearing in this medium in the form of pairs and in clusters. The pig showed no signs of orchitis. Smears made on potato grew poorly and showed no signs of the bacillus mallei either from original pus taken directly from new pustules or from sub-cultures made from the guinea pig. Search was made for saccharomyces, but no microorganism of that species could be found. During these researches, the temperature of the patient fluctuated between 102 degrees and 103 degrees, and the animal lost much weight.

Having found the same streptococci in each of the pustules examined, it was decided to prepare a vaccine. Six tubes of 21-hour cultures were used and from these ten ampules of autogenous vaccine were made. The first dose contained 1,500,000,000, the second, 3,000,000,000, and the others 4,500,000,000.

The first dose brought no apparent results, but twenty-four hours after the second dose, three days later, the temperature dropped to normal, the appetite and spirits returned and the pustules, new and old, which had remained angry and ulcer-like, began to cicatrize like magic. No new pustules developed and the patient was ready to work in two weeks after the date of the first dose. Three months later there was no evidence of trouble except two rounded keloids at the seat of the first two pustules, which will remain as lasting evidence of the seriousness of the infection.

This case is of more than ordinary importance to all veterinary practitioners and official veterinarians, because there was a time in the progress of the case when almost any one who has had experience with farcy legs might have hastily condemned the animal as one with glanders. The clinical picture was perfect with the possible exception of the symmetry of the first chain of pustules that developed above the intial lesion. The pustules of glanders on a farcy leg are not arranged so regularly. They have a more promiscuous distribution. It is this feature that aroused the doubt and led to the close investigation that saved this patient. During the second week of the illness the pustules were no longer characteristic of glanders; they were too large and deep and very unlike the cutaneous lesion produced by the Bacillus mallei. The one located in the popliteal region was a deep abscess that discharged a cupfull of pus when lanced. At this stage no experienced diagnostician would have made a mistake. The pitfall lay in the earlier developments of the disease.

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The duties of veterinary practice are to furnish a veterinary service in solving problems with reference to the health of animals and poultry which require for their solution technical skill.—T. E. M.

## RUMENOTOMY IN COW

In the late summer, I was called to visit a grade Guernsey cow belonging to an Italian family. They could hardly speak English but told me "She don't eat, she don't move, she grunts, she grunts, all time."

That much expressed volumes, so picking up an operating case and a rumenotomy set, I proceeded at once to the scene. This Guernsey cow was a marvel of size, good form, good looks and of unusual milk producing capacity, her well sprung ribs giving plenty of room for a large digestive system. She was a big milker in spite of the fact that she was seven months advanced in pregnancy. Constipation was very marked. Apparently this cow was the chief means of subsistence of the family, and her loss meant much to them.

I gave at once a dose of Epsom salts in which had been dissolved an ounce and a half of chloral. The animal was prepared for operation by clipping and shaving the hair and painting the skin with iodin. I always carry a good lariat in the car, and in such cases as this it comes in very handy. So the cow was laid down gently on her right side, her head secured to a tree and her hind legs secured to a post set for the purpose. The left side was thus in a nice position for the operation.

Forming an imaginary isosceles triangle, with the apex below, between the last rib and the external angle of the ilium, an incision running lengthwise of the muscular fibres was made, about eight inches in length, and a second one of corresponding length through the wall of the rumen. A continuous suture directly through the rumen first, then through the skin from the upper portion of the wound to the lower, was placed on both edges of the wound and the ends of the sutures tied together.

This is a very important step and should not be neglected, else a portion of the ingesta is likely to slip between the stomach and peritoneum, and a troublesome infection may occur.

Introducing the hand into the rumen, I was surprised to find the organ filled tight with ingesta, there being very little gas and little fluid. This doughy swelling would pit upon pressure prior to making the incision. Upon opening the rumen, it was found to be literally filled with long vines, from six to thirty feet in length. These grow along the ground and at intervals of about two feet send out shoots or tap roots into the soil, often growing to a length of forty feet. These are used in some parts of the west for feeding purposes after being cut into short lengths and are said to be very nutritious. The plant is known as the Kudzu vine More than a bushel of these vines were removed from this cow's stomach.

The wound was carefully cleansed, the walls of the rumen sutured with chromic gut, and the outer wound with silk interrupted sutures after the sustaining sutures had been removed. Three extra sutures were also placed well back of the wound to relieve the strain, and the lower portion was left open for drainage, which, from previous experience, I have found to be advisable. These extra sutures were left for a week before being removed. The wound healed with little trouble. Also the milk yield shrunk very little, and the cow made a nice recovery.

Cattle affected in this way are often allowed to die, when an operation would save the life of the patient. The operation can be performed very easily if the veterinarian will approach it with absolute confidence in his ability and use reasonable care in operative technic. In most cases some after care is necessary. It is surprising, however, how well the animals will do and how quickly they will recover. If not given before the operation it is wise to give a good cathartic afterwards to remove whatever sour ingesta may remain.

This is a good operation from almost any standpoint and is a wonderful practice builder. It is well, however, in talking over the situation with the client prior to the operation to be rather guarded in one's prognosis as accidents can happen but are not likely to if care is used in each and every step. Finally, it is well to remember that most of the troubles we see in advance as likely to happen never do occur if due care is used. Make a thorough, careful examination, be sure you are right, then wade right in and success will crown your efforts.

Ralph W. Balkam, M. D. V.
Springfield, Mass.

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## FORMULA SIMILAR TO ABSORBINE

I should like to know the composition of the preparation known as Absorbine.—R. C. G.

**Reply:** The following preparation is reported to be similar in appearance and action to Absorbine:

| | |
|---|---|
| Oil of wormwood | ℥ i |
| Oil of turpentine | ℥ iv |
| Oil of wintergreen (artificial) | ℥ ii |
| Oil of mustard (artificial) | ℥ ss |
| Rectified spirits | ℥ viii |

## INFECTED UDDER SURGICALLY TREATED

On September 5th, a client called at my office, stating that he had a fine Shorthorn cow with a caked udder. One quarter was swollen slightly, he said, and the milk from the affected gland was "stringy and hard to get." The cow had calved three months previously and was producing a heavy flow of milk.

I advised hot baths for the affected gland, morning and night, and gave the owner a phytolacca ointment to apply after each hot bath. Nothing more was heard of the case for three weeks, when one morning the owner called me on the telephone and asked me to come out. On my arrival at the place, I found the cow in a very bad condition. Both quarters on the right side were swollen badly, and a small opening on the lateral side of the posterior quarter was discharging pus Palpation revealed pus in both quarters. Pulse and respiration were slightly increased, and temperature 102° F. The animal had lost considerable weight, had a dejected appearance and showed symptoms of a general septicemia.

The owner stated that after he had first told me of the trouble, the milk kept getting more difficult to get, so he borrowed a milk tube and had been using that, but it seemed to be making bad matters worse, he said. The truth of the matter was he had been using this tube without the necessary antiseptic precautions and had introduced new infection into an already infected area.

The two teats on the affected side were amputated and the cow placed on a laxative diet, with instructions to the owner to call me in three days and inform me of the cow's condition. On the fourth day he called and said the cow was not getting along as she should and wanted me to come out to see her.

This time I found the animal's general condition slightly improved, but the affected quarters were in a deplorable condition. There was a foul odor present, and palpation revealed a doughy mass in each quarter on the right side. The parts were thoroughly disinfected and an incision three inches long made in each quarter and the necrotic material removed through the openings. The necrotic tissue was easily removed in its entirety. The cavity was irrigated with a 5 per cent liquor cresolis solution daily for four days, and in ten days was entirely healed.

I saw the animal again November 2nd, and she was gaining rapidly in flesh and will be ready for market in a short time.

W. B. Chapman

Powersville, Mo.

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## STERILITY IN COW

I have been called to treat a cow that at the last calving had her os uteri torn slightly and now she comes in heat regularly and takes the bull but does not get with calf. Upon examination I found the os hard and undilated and of a spiral shape. When the bull serves her, she stands and strains for a day or so. Is there anything that can be done for this condition? If so, I should appreciate some suggestion, as this is a valuable cow.—J. E. T.

**Reply:** You state that you found the os hard, undilated and of a spiral shape. The normal os is hard and undilated, and if you attempt to pass a dilator into the cervix, except at the time of estrum, you will find it very spiral in shape. Nevertheless, the fact that the cow strains after service would indicate that there is more or less of a cervicitis present, and if so, you should douche it with a good douching powder It is also suggested that you make a careful examination of the uterus per rectum, and if you find that the uterus is not normal or the ovary cystic, you should follow the treatment for this condition outlined by DeVine in previous articles in this publication.

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## METRITIS SUSPECTED

I have under observation a large nine-year-old Jersey cow that has had four very peculiar attacks of something that I haven't been able to diagnose. The symptoms are as follows: Gait staggering, loss of co-ordination in all four limbs; each eyeball seems to rock back and forth in the socket to such an extent that the animal is unable to focus eyes on objects; temperature subnormal; pulse and respiration about normal; some lessening of milk secretion. The lot in which the cow is pastured contains no weeds except dog fennel. She had the first attack on July 4th, and has had three attacks since then at various intervals. The cow has freshened since these spells started with nothing unusual occurring. The first three attacks lasted only about an hour after administering an ounce of chloral hydrate, but the last attack persisted throughout the day. After recovering each time, the animal seems to be in perfect health. The only feed the cow receives besides grass is a pan of ground oats night and morning.

If you can throw any light on the case, it will be greatly appreciated.—E. B. M.

**Reply:** The description reads as if the animal were suffering from some sort of toxemia, or at least from general intoxication. Since the feed of this animal would seem to eliminate that as the probabe cause, may it not be due to some focus of infection? Along this line, one first thinks of metritis, with possibly a large collection of pus in the uterus. A palpation of the uterus per rectum would speedily decide this question. Or the condition may be due to some form of brain trouble, possibly a transitory affection of the cerebellum.

## TRAUMATIC PERICARDITIS IN COW WITH USUAL TERMINATION

One morning during the early part of September I received a call from a farmer living a short distance from town, stating that he had a cow that was ailing and wanted me to come out and see her.

On my arrival at the place the owner met me at the gate, informing me that he would go and drive the cow, which was grazing about 300 yards distant, to the barn. Desiring to observe the animal as it was being driven, I accompanied him to where it was grazing and together we started it towards the barn.

The first 100 yards were made without any appreciable change from normal in the cow's gait, but at this point we had to descend a small hill and I noticed a peculiar shuffling gait, the animal acting stiff in the front parts and at each step emitting a grunt as if the effort to go down hill was causing her considerable pain. By the time we had reached the barn, the animal seemed very fatigued and the grunting was more pronounced. She was now emitting the grunts with each expiration, though standing perfectly quiet.

The animal was placed in a stanchion for further examination and the following history obtained from the owner.

The cow, seven years old, had been raised by the owner and had never shown previous illness. She had borne three calves, the last one being dropped sometime in June Being of a restless disposition, the cow was never broken to milk but her calves allowed to run with her in the pasture. The owner stated that she apparently gave plenty of milk for the calf until about the last two weeks and he had noticed it sucking frequently, apparently without getting enough nourishment, and that it was not doing so well of late. Deciding the pasture was getting rather short where this cow was being kept, he drove her one morning, about a half mile to a different pasture with the observation that she was "short of wind." It was on the following morning that he called me on the case.

After remaining quiet a short time, the animal seemed to be easier. The grunting was not so pronounced but she would cough frequently and each time the cough was accompanied with considerable pain. There was a venous pulse present; the animal stood with the elbows slightly extended from the chest walls; dull expression of the eyes, and temperature elevated two degrees above normal. On applying the stethoscope to the chest wall, a splashing sound was discerned with each heart beat. All the symptoms of traumatic pericarditis were present and a diagnosis of the same made.

The possibilities of an operation to relieve the condition were explained to the owner, but being rather inclined to disbelieve the idea of a cow "having a wire in her heart," the owner was not over-enthused about an operation. However, I told him that the cow would die and that I should like to hold an autopsy after her death. About a week later he called me and said that the cow was about dead and wished I would come out and post her. On opening the thoracic cavity the heart was noticed enlarged about three times its normal size. There was at least a gallon of foul smelling fluid inside the pericardial sac, and piercing the heart on the posterior surface was a piece of presumably old barb wire with the barbs missing. It extended back through the diaphragm and emerged from the anterior wall of the reticulum. The wire was approximately four inches long. There was extensive pleuritis on the left side, the thoracic pleurae adhering in large patches to the chest wall. There was some inflammation of the diaphragm and reticulum but not as much as one would expect from a lesion of this nature.

The autopsy findings fully convinced the owner that I was correct in my diagnosis and caused him to lament considerably that he had not permitted an operation when the trouble was first diagnosed.

In view of the autopsy findings in this animal, I do not believe the operation would have been of any benefit to the patient if I had performed one on my first visit, owing to the extraordinary hypertrophy of the heart and the other extensive lesions present. However, as the exact extent of the lesions cannot be determined clinically, I fully believe that rumen-

otomy to relieve this condition would be justified as a last resort.

W. B. Chapman

Powersville, Mo.

## LUXATION OF THE FEMUR IN A COW

Now and again one finds recorded in the journals instances of dislocation of the hip joint in the larger animals. They are usually bi-lateral dislocations in cattle that have fallen with both hind legs in extreme abduction. In The Veterinary News, of, I think, July, 1921, I recorded a case affecting one hind leg of a horse. The instances I am now giving occurred in a cow. The animal, a recently calved Ayrshire, was found in a field, very lame on the right hind leg. I was consulted, and found at the region of the hip joint a large swelling, obviously bony, and decided in outline, with a softer, more diffuse swelling extending down to the stifle. The cow stood with the limb rotated outwards from the hip, but otherwise the posture was natural; measurements from the external iliac angles to the ground showed the affected limb to be from half an inch to one inch shorter than the opposite one In manipulation, abduction of the limb was rather limited, but movement in other directions was quite free, and accompanied by a faint grating sound, which could only be detected by careful ausculation. Lameness was severe, the cow moving with difficulty, though some weight could be borne on the lame leg. During progression, and also when the limb was manipulated, the head of the femur could be seen and felt freely moving. I based my diagnosis on the position and nature of the swelling, the shortening of the limb, the absence of crepitation, and of excessive mobility, and the character of the walking gait. The grating sound that I have mentioned probably resulted from the neck of the femur rubbing on the shaft of the ilium. As the cow was in good health and milking well, and I considered that there was every prospect of the tissues accommodating themselves to the presence of a foreign body (in the shape of the head of the femur), I did not attempt reduction, but advised the owner of the animal to put her in a convenient field by herself, to milk her in the field, and leave the case to nature's adaptability. This was in June, 1921, therefore the cow had practically the whole season in her field, coming indoors for the winter along with the others. Her health never suffered and her yield of milk was undiminished. Lameness continued to be acute for about a month, and then gradually lessened, but of course the abnormal gait, due to shortening of the limb, was never lost, and the swelling at the hip joint persisted, even becoming more noticeable. When last I saw the cow, nine months after the onset, she stood on the affected leg without any sign of discomfort, and trotted quite freely. Measurement then showed the leg to be three inches shorter than the other hind leg. It was some considerable time before I was back at the farm again, and in the interval the cow was "put dry," fattened off in the ordinary course, and sent to the butcher.

Since the above note was written (a long time ago), I have had the opportunity to observe, over a period of eleven months, another cow suffering from the same condition. In this case I could get no reliable history, but the symptoms practically coincide with those just related, and the cow suffers no apparent inconvenience.—Donald Campbell, M. R. C. V. S., in The Veterinary Record.

## MALADY SIMULATING SWEET CLOVER DISEASE IN CATTLE

Dr. Logan Allen of Windsor, Mo., reported the occurrence of an interesting disease in cattle in West Central Missouri. The affected cattle were on timothy and red top pasture. There was no sweet clover in the pasture or adjacent to the fence. Several cattle were affected and the principal symptom manifested consisted of a subcutaneous tumefaction. The swellings varied in size and location, although they were usually on the brisket and were rather doughy and were apparently a subcutaneous hemorrhage.

Believing that the condition was in some way associated with the feed and in order to obtain definite information, it was recommended that one-half of the cattle be removed from the pasture and placed in a stubble field. Both lots of cattle were given dried iron sulphate in their salt. The swellings had all disappeared within ten days excepting in one case in which an exploratory incision was made into the swelling.

This is an interesting report, the clinical history corresponding rather closely to sweet clover disease that has been previously reported. However, there was no sweet clover in the pasture or accessible to these cattle. The condition was apparently not infectious. Veterinary Medicine will be glad to publish further reports of this character and particularly if some one can suggest the cause of the malady.

A. T. Kinsley

## RECOVERY FROM PERICARDITIS

On July 15, 1924, I was called to see a cow which the owner said had been sick for about two weeks. When I first saw the animal, she was standing in the barnyard with her nose almost touching the ground, back arched, tucked up at the flank and hair standing straight up. A thick edematous swelling extended from between the lower jaws to between the front legs and under the chest. There was a slight increase in temperature, a jugular pulse and a rather jerky breathing Auscultation over the region of the heart revealed a characteristic "splash, splash, splash." I unhesitatingly pronounced the case traumatic pericarditis and my prognosis was unfavorable. I told the owner I thought the cow would die in a few days. He said if that was the case we had just as well kill the animal at once and get rid of the trouble, but I replied that that was against my principles and we would let nature take its course.

When the cow lay down nearly all night, the swelling would diminish, but during the day she stood most of the time with her head lowered, and then the swelling would increase again. A few days later I was in that neighborhood and naturally called to see how the case was progressing. The cow was standing as before, but now the swelling had extended almost over the entire head. There was so much swelling about the head that the eyes bulged out somewhat like those of a pug dog, and the swelling had also extended along the brisket. I could hear no sound about the heart and only a wheezing in the bronchi. At this visit, I made a number of incisions in the skin at the most dependent parts, which liberated a quantity of serum. All under the skin was a layer of yellow gelatinous exudate. I attributed failure to hear the heart to the excessive quantity of fluid around it. The owner still wanted to kill the cow, but I said, "No," and gave him an ounce of potassium iodid, made up in eight doses, to be given one dose night and morning.

A week later the cow was still living, so she was given another ounce of potassium iodid as before. She ate a little all the time but looked as if each day would be her last, becoming more and more emaciated. I gave her intestinal antiseptics, kept her in the barn in the day time out of the way of flies and out in the open at night. She was given a little green alfalfa, of which she ate sparingly. Her bowels moved naturally.

For six weeks the swelling under the chest to the lower jaws and on the head continued to be as bad as ever, and no appreciable change was observed in any way, except for the progressive loss of flesh We could not understand how the cow was able to hang on.

At the end of six weeks, the lady of the house said she believed she had seen the cow chew her cud, and by watching the animal I could see movements of the rumen, and thought she got up a little easier. But now as before, I could not understand how the cow could live as she had become a mere frame of bones with the skin drawn over them.

Finally, however, this cow has made a recovery and is rapidly regaining her flesh but not her milk flow.

I have practiced thirty years and have seen a great many cases of traumatic pericarditis, and this seemed to be as well marked a case as any I ever saw. Did the foreign body become encysted and the exudate absorbed, or was I mistaken in my diagnosis? If so, what was the trouble? I should be glad to have the opinions of some of my fellow practitioners.

W. N. Hobbs, D. V. S.

Kensington, Kan.

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## HEMORRHAGIC SEPTICEMIA AGGRESSIN VERSUS BACTERIN

Many practitioners have sought information concerning the relative value of hemorrhagic septicemia aggressin and hemorrhagic septicemia bacterin. The hemorrhagic septicemia aggressin has been used for a very short time and it is not possible to give the length of duration of immunity obtained from that product.

Aggressin, and hemorrhagic septicemia aggressin in particular, produces a relatively long negative phase; thus, it has been found that animals that are ordinarily not susceptible to infection with the bipolaris become quite susceptible after injection of varying quantities of hemorrhagic septicemia aggressin. This fact has been taken advantage of in the production of hemorrhagic septicemia aggressin. It has been found also that the marked negative phase resulting from injections of hemorrhagic septicemia aggressin occurs in animals infected in the field, and reports have been made, by practitioners, of disastrous results following the use of hemorrhagic septicemia aggressin in infected herds.

It was thought that it might be possible to evade some of the post-vaccination difficulties in swine by giving hemorrhagic septicemia aggressin in conjunction with the serum and virus,

but it has been found that the marked negative phase following the injection of aggressin eliminates the use of hemorrhagic septicemia aggressin in hog cholera immunization.

Hemorrhagic septicemia aggressin is a valuable product when used in herds in which there is no infection, but it should not be used in infected herds or in conjunction with any other serum and virus.

Reports from practitioners on the use of hemorrhagic septicemia aggressin will be gladly received.

A. T. Kinsley

## FORMULA FOR CRACKED HEELS

The following is very good for cracked heels:

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| | |
|---|---|
| Prec. sulphur | 6 ounces |
| Septico (P. D. & Co.) | 1 ounce |
| Denat. alcohol | 4 ounces |
| Crude petroleum | 24 ounces |

Saturate some oakum and place in position, then bandage. You will see a wonderful change for the better in two or three days.

It is also effective in many cases of eczema and in mange of dogs.

This is a cheap formula and worthy of a trial The light crude oil of Butler County, Pennsylvania, is best for the petroleum ingredient. Dark oil is too heavy.

T. E. Booth

New York, N. Y.

## MULE WITH CRUSHED SKULL SUCCESSFULLY TREATED

On October 19th, I was called to see a three-year-old mare mule that was in a barn with more than fifty others being fed for the market. The owner said that when he went in the barn he saw this mule stagger for about thirty feet and fall unconscious.

When I arrived the mule was lying flat on her side as if she had been anesthetized. Pulse, temperature and respirations were normal; no blood or outward indications of any injury. On close examination, I found the mule had been kicked in the head and a section of the skull had been crushed in and was pressing on the brain.

I operated, removing a loose section of bone of the size of a silver dollar from over the brain and elevated another section of bone from the brain. That night the animal got up. I treated the case the next day at the barn, and the following day the mule was able to walk to my hospital, a distance of three-fourths of a mile. She was in the hospital five days, and on November 19th, the case was almost well, the wounds having healed, leaving only a slight scar.

I might mention that it was impossible for the mule to eat oats out of a box on account of paralysis of the upper lip for about a week.

W. D. Howe, D .V. M

Clarence, Mo.

## TREATMENT FOR CHOKE IN HORSE

Fill two ounce capsules with common soda; then slit the capsules on the side and slip them into the esophagus. Tell the client you have another call to make and if the patient is not all right in an hour to call you. This will do the trick. The soda forms a gas which dilates the esophagus, and the obstruction slips down.

It also works well in sows that have difficulty in farrowing. Insert four capsules and wait about an hour.—W. S.

## ACTIVE IMMUNIZATION AGAINST SARCOMA

Mertens, in Deutsche Zeitschrift fur Chirugie, Leipzig, gives a profusely illustrated description of his success in treating a white mare, 14 years old, with a large ulcerating melanoma between the tail and the anus It partially subsided under the influence of phenol-treated cells from a metastatic tumor in the abdominal wall or from the primary melanoma. One part of the finely ground tumor cells was mixed with 9 parts of physiologic sodium chlorid solution, with addition of 1 c.c. of 5 per cent phenol solution, and the vials were shaken by hand occasionally during the first days. The injection was made subcutaneously in the neck, the dose 20 c.c. each time, a total of 9 gm. of tumor tissue in thirty-three days. The extensive ulcerating surface of the primary melanoma healed over, the previously fetid odor disappearing permanently. Further injections were made to a total of 14 gm. of tumor substance in the fifty-nine days, the tumor subsiding in size. Two other courses of similar treatment were made, obtaining the material from the primary melanoma and the metastatic tumors. When the animal was slaughtered, melanin was found widely distributed through the organs, which he accepts as testifying to extensive destruction of the tumor cells. He regards it as most significant that under the influence of the injections there was no proliferation of the sarcoma when pieces were excised from it. Also that the phenol treatment did not apparently impair the

immunizing properties of the cell suspension. But most important of all was the retrogression and greater movability of the parts of the tumor left, making them operable, especially as the general condition improved. White patches developed on the skin of the body, head and mouth as the tumor shrank in size. These effects were realized with a total of 44 gm. of tumor tissue, to a weight of 380,000 gm. This corresponds to 5.2 gm. of tumor tissue for a man weighing 60 kg. When the suspension was treated with heat (to kill streptococci casually present), in addition to the phenol, the effect was apparently less pronounced. The mare was under observation from July, 1922, until it was slaughtered, Dec. 5, 1923.—Jour. A. M. A., Dec. 13, 1924.

## SERUM TREATMENT FOR GLANDERS

Through our research work on glanders in horses and on the products of the causative agent of the disease, Bacillus mallei, we have produced a serum for which remarkable claims have been made by physicians who have administered it in the treatment of glanders in man. Three cases of human glanders in the province of Manitoba to whom the serum treatment was given, have been reported upon as having made an astonishing recovery.—Report of Veterinary Director General, Dept. of Agriculture, Canada.

## AN UNUSUAL CAUSE OF DEATH

A few days ago a mule was brought to me apparently dying. The mucous membrane of the gums was blanched, and his pulse was very weak. The skin was cold and clammy, and the animal gave the impression of having—for example—a ruptured stomach, but in any case I gave instructions for his tackle to be taken off very quickly, and the door of the colic box bolted. He lay down and showed signs of pain, but I was unable to remain longer to watch him.

On returning several hours later I was told he had died about ten minutes after my leaving.

Post-mortem showed death to have resulted from hemorrhage of the bowel.

A piece of beech twig, five inches long, three-sixteenths of an inch in diameter at the thickest part, and a full one-eighth at the thinnest, was found two feet from the pylorus, with the sharp thin end penetrating the wall, but not perforating it. The stomach and bowels were full of blood; indeed, all the blood of the carcass appeared to be in them.—L. Auchterlonie, M. R. C. V. S., in The Veterinary Record.

## DEVICE FOR RAISING FALLEN HORSES

I noted in the December issue of the journal, as well as in an earlier issue, Dr. A. C. Wight's method of raising a horse No doubt, Dr. Wight's method of fixing the rope about the horse's body is good. I have never tried it, as I found a simpler method which I used in raising a "downer."

As for the block and tackle, I don't own one, and if I did, it would always be loaned out. Furthermore, I usually find my cases of "downers" in a barn or shed with low ceiling, with nothing above substantial enough to swing a horse on, and not infrequently the fallen animal is out in a pasture. But there are nearly always poles or scantlings at hand to make what we call a "sweep pole," which I have found to answer very satisfactorily. I should say that on an average farm I can rig up this apparatus and have a horse on its feet in an hour, and have to leave no equipment that I might never get back, except possibly a rope.

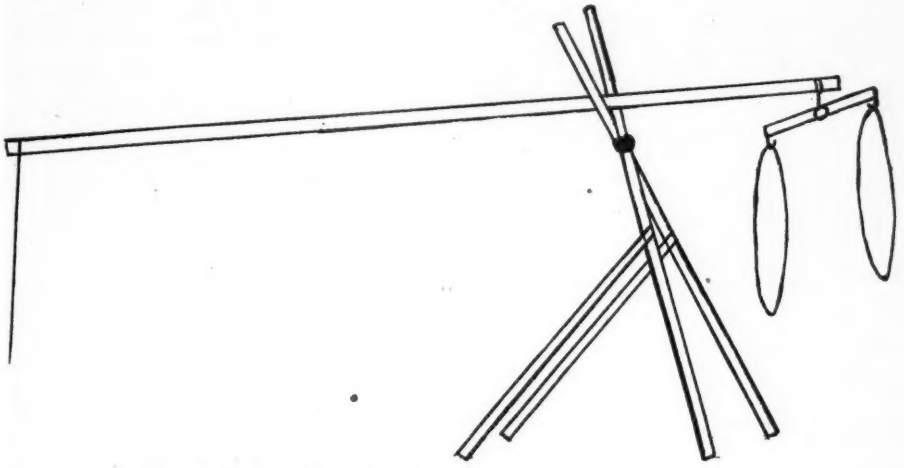
The accompanying rough sketch shows the device I use to raise a horse. Two poles are crossed about seven feet from the butts and tied with chain at the cross in a fashion to form a fork with the ends of the poles. The poles so crossed are held in an upright position, slanting about one foot at the top, and are made secure in this position by nailing a strong scantling to each pole, about two feet from the cross and extending to the ground at an angle of about 45 degrees. These pieces prop the poles in position.

A pole about 35 or 40 feet in length is placed in the fork, the large end foremost, extending six or seven feet past the fork. This end is notched and a wagon singletree tied to it. A three-fourths or one-inch rope is doubled and passed around the horse's body just back of the elbows and tied about the withers. Another rope is fixed the same way around the flank. These ropes are hooked on the singletree, and the horse is raised by several men pulling down on a rope tied to the long end of the long pole. When the horse is on his feet and steady, the rope at the end of the pole is fastened to a stake or other convenient object to secure it in position.

Instead of using poles to make the apparatus, it may be made of pieces of lumber and scantlings to be found on the premises. A pole forked at the top and placed with the butt end in the ground like a fence post may be used instead

of the two poles fixed to cross at the top to form a fulcrum; but it is not so conveniently moved from place to place in case the animal goes down again.

About four weeks ago, I was called thirty miles to kill a fine mule that had been down thirty-six hours. The animal was badly bruised and could not raise himself on to his breast In not over 45 minutes I had my crude apparatus made and the mule on his feet. The next day the mule was let out and while grazing about, went down again. In a jiffy the owner had moved the rigging, and his mule was soon up again. This mule had to be raised several times in the course of a week but is in harness now, and I have a booster in that neck of the woods.

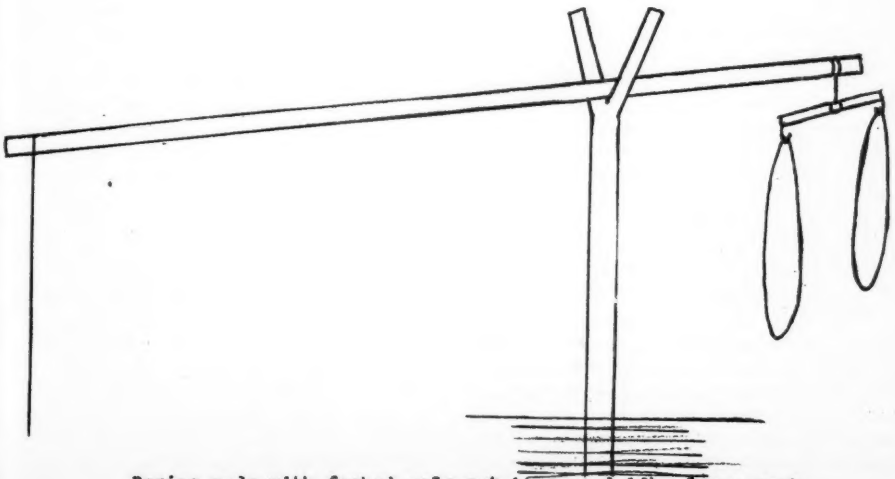


Device made with crossed poles

Again last month I was called thirty miles to see a good mule found down in the stable and unable to rise. He was dragged out of the barn, the "sweep pole" fixed up, and the mule was soon on his feet and did nicely.

Jos. T. Alston, M. D. C.

Tupelo, Miss.



Device made with forked pole set in ground like fence post

## CONTRACTED TENDON IN MULE

Subject: Mule, 8 years old, with contracted tendon. An operation was performed and a shoe brace put on the animal. After tenotomy operation, the mule did fine and walked well for several days. The animal was in the country eight miles away and the client not wanting to pay for a call, told me the brace was injuring the mule's leg. I advised him to remove the brace if the mule was well. The shoe was lifted, but the client failed to use a liniment to relieve the soreness and the mule would not use the leg; consequently, the tendon contracted as badly as ever. Would medicinal treatment be advisable?—Texas.

**Reply:** No.

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## PARALYSIS IN SWINE

I should like to see some discussion of paralysis in swine.—J. N. M.

**Reply by A. T. Kinsley:** The term "paralysis" is usually used rather indiscriminately and does not designate any specific morbid condition but is rather a group name for a variety of conditions manifested by locomotory disturbances.

True paralysis is a disease of the nervous tissue, spinal cord or brain and occurs in swine. This condition is usually manifested by a progressive motor paralysis and the affected animals rarely, if ever, recover regardless of treatment.

The most common condition in swine that is usually designated as paralysis, is a result of insufficient mineral salts (calcium phosphate) This condition is ordinarily known as rickets and, of course, is not a true paralysis, although there are locomotory disturbances. Rickets can be prevented by providing a diet sufficiently rich in phosphates. The condition can be overcome in pigs by the administration of codliver oil and calcium phosphates. The length of time necessary to recuperate depends on the duration of the disease. Swine that have manifested symptoms for several months will not recover quickly. On the other hand, those that have recently developed symptoms usually respond promptly to treatment.

Some practitioners have contended that there is a form of paralysis resulting from the invasion of the various tissues in the loin by kidney worms. It is possible that such parasitic invasion may reduce the resistance, but it is questionable whether parasites can actually produce paralysis.

Some few cases of apparent paralysis have been observed where autopsy evidenced clearly that tuberculous lesions of the spinal column were responsible.

Some few cases of paralysis evidence no change in the nervous system, and there is apparently no dietary deficiency. The cause cannot be attributed to parasitic invasion or tuberculous process, and some have thought that possibly inbreeding may be a factor in these instances. Fortunately, the latter group of cases of paralysis are relatively rare, and it is possible that the actual causative factor has been overlooked.

In conclusion, therefore, it may be stated that so-called pig paralysis, as the term is usually used, includes not only a disease of the nervous system and dietary deficiency, but also disturbance resulting from infection and possibly parasitism. The usual and most common type of so-called paralysis, however, is the result of a deficient diet and can be quite readily prevented and successfully treated unless the cases be of too long standing.

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## TAPEWORMS OF SHEEP

Adult tapeworms are usually composed of a head, armed with hooks and suckers as a rule (though those in the sheep's intestines have no hooks), and a body consisting of a number of flat segments arranged in a chain. Adult tapeworms are usually found in the small intestines, but in some cases they may occur in the stomach, large intestines, or the ducts of the liver and pancreas. Tapeworms produce eggs of microscopic size which pass out in the feces and which on being swallowed by a suitable host, usually of a sort different from the host of the adult tapeworm, give rise to an intermediate stage, or larva, which is usually more or less spherical or elliptical and composed of a tapeworm head and neck attached to a membrane, the membrane usually inclosing a clear fluid. In the case of many of the common tapeworms this form is called a bladder-worm. It usually occurs in the body tissues, and when these are eaten by the host of the adult tapeworm the head of the tapeworm passes to the intestine and forms the adult worm by the addition of segments back of the head. This tapeworm in turn produces eggs and the cycle is repeated. Thus, certain tapeworms in the dog give rise to certain bladderworms in sheep, the tapeworm eggs in the feces of the dog being deposited on the pasture and picked up

by sheep with the herbage that they eat. The dog in turn becomes infested with tapeworms when it eats the bladderworms in the meat, brain, liver, entrails, or other parts of the sheep.

Sheep may harbor adult tapeworms in the intestine and bladderworms in the body tissues.—M. C. Hall, U. S. Dept. of Agr., Bul. 1330.

## STRYCHNIN POISONING IN DOGS

In the kennels of Mr H., tincture of strychnin was ordered for some police puppies as a tonic to improve their appetite and condition and to exalt the vital powers in general. The drug was mixed with lacto-pepsin, one ounce of the tincture to three ounces of the lacto-pepsin, and given in doses of about ten drops, three times a day.

The ages of the dogs varied between three and six months. This treatment was kept up for three days, some of the animals showing some improvement. On the fourth day, after the morning's treatment, three of the puppies suddenly showed symptoms of strychnin poisoning. The faces were drawn into a grin, the lower jaws became immovable, the necks rigid, the muscles contracted spasmodically, especially the extensor muscles, and in a few minutes the result was fatal. A similar case happened in the same kennel some time previously but not with such severe results. The animal recovered on being treated with rectal injection of chloral hydrate.

Considering the minute doses, the length of time and the three days this treatment was kept up without showing any symptoms of poisoning, we must come to the conclusion that the fatal result was due to the accumulation of the strychnin base. The physiological action of strychnin would indicate this.

It is well known that strychnin is absorbed rather slowly by the stomach but more rapidly by the rectum or when given hypodermically. Its toxic effects are more promptly manifested after injection into the rectum than when administered by the mouth. The urinary secretion is insufficient, probably due to limitation of the circulation through the kidneys by contraction of the vessels. Therefore, this drug tends to accumulate in the system and produces the toxic action.

On account of the slow rate of absorption and elimination of strychnin, its use in minute doses should be occasionally suspended for a time to prevent undesirable cumulative action.

J. Serling, D. V. M.

Bronx, N. Y.

## CHRONIC COUGH IN DOGS

Could you tell me what would be good for a chronic cough in dogs? I have had several Airedales suffering with a chronic cough, for which I have tried everything I can think of, but get no favorable results—B. K., Ottawa.

**Reply by J. G. Horning:** A chronic cough is sometimes due to enlarged tonsils Removal of the tonsils is about the only satisfactory treatment. In cases where the client does not wish a surgical operation performed, we have used Smith's gylcoheroin, a teaspoonful every three or four hours. We have also found a cough condition in dogs due to stomach disorder, and this has been corrected by diet. There is also a cough in heartworm infestation that responds to no treatment, although it is doubtful if this condition would appear in your climate.

If the cough is due to bronchitis, an appropriate treatment for that condition will, of course, be indicated. If it is not due to enlarged tonsils or to any active irritation of the bronchi, potassium bichromate often works well, although it is sometimes somewhat of a nuisance to give it. The administration of 1/1000 grain tablets, crushed and sprinkled over the tongue so that the dog cannot get them out of his mouth and cannot swallow them, has given good results in coughs that seemed to perpetuate themselves by the mechanical irritation resulting from the cough. Best results are obtained from giving one of these tablets every ten minutes until about a dozen have been given, and then give three or four tablets twice daily for a couple of days.

## RABIES SPREAD BY CARRIERS

Rabies became an important public health problem in Czechoslavakia after the conclusion of the war, as in most of the central Euorpean countries. Although strict measures for the suppression of this malady have been instituted, including free Pasteur treatment and compulsory muzzling of dogs, there seems to be no reduction in the occurrence of the disease, especially in the eastern provinces. The ministry of agriculture is preparing new rules and regulations governing the police control of dogs. A special film was prepared in which all the forms of rabies in dogs, cats, horses, cows and man are shown in all its stages, which will be used for educational purposes in the infested territory. Rabies is being studied as a scientific problem especially at the Brno School of Vet-

erinary Medicine by Prof. Francis Kral. He has been able to demonstrate that rabies can disappear spontaneously in an animal in a few hours, although typical symptoms have been present and the disease diagnosed later on without any doubt through pathologic findings. Also, he has described atypical forms of the disease in domestic animals which are almost never diagnosed as rabies. These researches have naturally an enormous importance for the suppression of the disease, as they put rabies in the class of diseases spread by carriers. This also explains why rabies is continuing in Czechoslovakia in spite of the fact that strict measures are being applied in every case of demonstrable rabies in animals. As it is evident that the eradication of this dangerous disease cannot be accomplished without the co-operation of the public and proper education, especially among the owners of dogs, steps have been taken for the organization of a league against rabies along the lines of similar associations, such as those against tuberculosis and infant mortality. At a recent meeting in Brno, a preparatory committee for the foundation of such a league was appointed.—Jour. A. M. A., Nov. 29, 1924.

## ROUNDWORMS IN FOXES

In their paper, "When, Where and How Fox Pups Get Roundworms," which Drs. F. B. Hadley, B. L. Warwick, and E. M. Gildow, of the University of Wisconsin, read before the American-National Fox Breeders' Association, held in Minneapolis, Minnesota, November 17-22, the statement was made that this worm is not only responsible for various digestive and respiratory disturbances of young foxes, but also for deaths from clogging of the bowel.

These investigators also stated that the minute larvae of the roundworm are hatched from eggs taken into the body of the mother fox with food and drink. They then pass into her blood stream, cross the placenta, and enter the body of the unborn pup. Shortly these larval worms are carried to the lungs, then pass up the windpipe of the unborn pup and are swallowed, thus reaching the bowel when they eventually grow into worms from 3½ to 5½ inches long.

This important and interesting discovery is based on the finding of great numbers of larval worms in the lungs of newborn fox pups. This information should be of great help to fox farmers in raising young foxes, as it demonstrates the exact manner by which they become infested.

To prevent this trouble, these men advised ridding all female foxes of worms before breeding, and keeping them from swallowing roundworm eggs during their entire gestation period. Since the eggs are exceedingly resistant to the disinfectants commonly used about fox ranches, it is practically impossible to destroy them with these agents unless they are immersed in a strong solution for several hours. Consequently, scalding water is advised as the best means of destroying them.

## OUTBREAK OF DISTEMPER IN NEW ENGLAND

The first indications noted were early in March, last year, when three Police dogs were affected on the same premises. They showed the usual nasal, bronchial and pulmonary symptoms. No biologics were used in these cases, but the usual line of treatment was prescribed and carried out, together with careful nursing. Two of the dogs died. The youngest of the three recovered but developed that loathsome condition, ozena This responded to treatment, when in about eight weeks chorea developed in a very severe form. However, the condition of the patient in this respect improved up to a certain point, but the animal did not entirely recover, and at present it appears that the chorea will be permanent.

Another Police dog on adjoining property was given large doses of serum and no distemper appeared.

In the same locality a husky Airedale and a Cocker Spaniel were given the prophylactic treatment. In about eight weeks, the Airedale, in spite of receiving serum along with other treatment, died with the pulmonary form of distemper. The Spaniel did not contract the disease. The Airedale was kept quite a ways from the village, while the Spaniel was occasionally seen on the sidewalks frequented by other dogs.

In close proximity on the same premises, an Airedale and Police dog were given the prophylactic treatment. In about four weeks, distemper appeared in both in the form of coryza, the Police dog being the worst affected. No serum was used and no medication, except iron, quinin and strychnin phosphates at regular intervals. Both made complete recovery with no ill results following.

Two dogs some distance from the preceding two, a Collie and a Setter, owned by the same individual, presented an interesting case for study. I was called to treat the Collie for a so-called "cold," and suspected distemper. Nothing more was shown than a coryza with a

slight cough. This seemed to respond to treatment admirably, and at no time did the dog lose appetite. An uneventful recovery took place, but in about five weeks chorea developed suddenly and quite severely and still remains so. These two dogs were closely associated, eating from the same dish and sleeping in the same bed, but the Setter escaped infection.

In the case of a spayed cross-bred Collie female, the common symptoms of distemper developed, which was closely looked for by the owner and immediate treatment begun. This case proved fatal in five days, the dog dying with pneumonia, one lung being solidified. This occurred in the same locality as the case previously described.

In another locality, a diarrhea with more or less intestinal hemorrhage, was associated with the symptoms of distemper. Three of these cases responded by using, in addition to the regular line of treatment, intestinal antiseptics and repeated enemas of hot saline solution. It is interesting to note that one of these cases occurred in a Sealyham Terrier supposed to have been infected from another dog of the same breed brought from New York City immediately after recovering from distemper. Two or three other Sealyhams and one or two small dogs of cross-breed were closely associated with the two aforementioned, but did not get the disease.

Gilliams Service

**Spring Stethoscope used in a London hospital for sounding the Hearts of Dogs brought in for treatment. It has been found to be quite efficient for use with animals.**

Only one case of paralysis was noted as a sequel of distemper, or at least the paralysis was attributed to that. This was in a Collie dog that had a slight case of the "cold" or coryza form of distemper about five weeks before paralysis was noted. The animal had little or no control of the posterior extremities and micturition was involuntary. Chorea was also associated with this in a slight degree, the muscles of the head twiching slightly. An unfavorable prognosis was given, but it was decided to try treatment for a little while because of sentimental reasons. The treatment consisted of laxatives, Fowler's solution and strychnin, and to help appease the owner, rubifacients and stimulants were constantly applied to the sacral region of the patient. In about seven or eight days, improvement was noted, the dog being able to stand and take a few steps while being supported by the tail. Improvement was steady, and at present the dog seems quite normal.

All of this seems to indicate that almost any and every thing may be looked for in an outbreak of distemper, and it also seems to strengthen our belief in the statements made by authorities that in distemper we are dealing with a condition that we know little or nothing about.

E. L. Thornton

Canaan, Conn.

## BUMBLEFOOT

While bumblefoot may not properly be classed among the infectious diseases, yet the prevalence of the condition in many flocks gives it many characteristics of a not entirely accidental condition.

Bumblefoot is an inflammation of the foot pad, tendon sheaths and adjacent tissues of the foot. In many cases of bumblefoot the cardinal symptoms of inflammation may be traced. In other cases, one's attention is first called to the hard swellings of the feet which contain caseous cores.

The etiology of bumblefoot is not definitely known. Bruising of the sole due to high roosts, hard floors and penetration of sharp objects, such as thorns and thistles, are usually given as the predisposing causes. Bacteriologically many cases of bumblefoot are apparently sterile. Other cases, however, harbor pyogenic bacteria while many yield organisms indistinguishable from Pasteurella avicida It appears that the cholera organism may produce chronic localized abscess of this kind. Bumblefoot caused by Pasteurella avicida practically always runs a severe, and often fatal course, while the nonspecific type runs a mild course. Some cases are due to fractures of the bones of the foot.

Treatment: In mild cases treatments ordinarily used for abscesses may be employed. In severe cases, when the bird rapidly becomes thin and emaciated, destruction of the affected individual had best be resorted to.—Mo. State Poultry Exp. Sta.

## CLEANING AND DISINFECTION OF PREMISES IN AVIAN TUBERCULOSIS

In tuberculous flocks all clinically infected chickens and those reacting to the tuberculin test should be destroyed. Buildings, houses, coops, and feeding troughs should be thoroughly cleaned and disinfected. Since direct action of the sunlight is efficient in destroying the tuberculosis organism, poultry houses should be constructed to admit a maximum amount of sunlight. Hot lye water (one pound of lye to forty gallons of water) applied with a broom will aid in cleaning, while three per cent cresol (U. S. P.) is a reliable germicidal solution and may be efficiently applied with a spray pump. Infected lots should be plowed and sowed to crops. In addition to disinfection of houses and disposing of infected chickens it is important that the young chickens be carefully segregated from mature stock and placed on fresh ground. The custom of marketing all chickens over two years of age from flocks that have been infected, should be practiced to guard against a recurrence of the disease. The relatively short productive life of domestic fowls makes it practicable in badly infected flocks to restock entirely without great cost, inconvenience or delay. A few months should elapse following the disposal of the infected chickens and the cleaning and disinfection of premises before healthy stock is purchased.—Animal Pathology Exchange, Univ. of Illinois.

## CLOACITIS

Cloacitis, or vent gleet, is an inflammation of the vent and adjacent tissues, the cause of which has not been determined. Occasionally it affects a large number of fowls in a flock but usually only a few individuals are affected The method of transmission has been determined but it is usually considered that the male bird is the carrier of the disease. Cases of cloacitis do occur when no males are kept in the pens.

Diagnosis: The characteristic foul odor of cloacitis is almost diagnostic. On examination the vent is found inflamed or covered with dry, hard scabs of varying intensity.

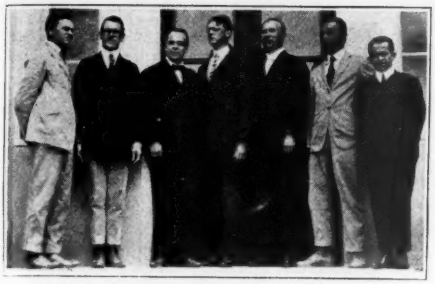
Treatment: If treatment is begun early, prompt recovery may be expected. If it is delayed, the bird should be disposed of rather than treated.

The parts should be carefully cleaned with any mild antiseptic. Following this the application of argyrol, acriflavine or iodoform powder will give good results if treatment is repeated often until healing is well under way.—Mo. State Poultry Exp. Station.

## TAKING CROW OUT OF ROOSTERS

I should like to know how to take the crow out of roosters. I receive many inquiries on this subject and will appreciate the information—S. R.

**Reply:** You will find, in the June, 1924, issue, an article by Dr. Geo. R. White, on caponizing roosters. If it is desired merely to prevent roosters from crowing and yet retain their breeding qualities, it is said may be done by tying the wings down. This is best done by running a cord from the quill of the last wing feathers on one side, across under the bird to a similar location on the other wing, the theory being that a rooster will not crow unless it can raise its wings.



## LETTER FROM BRAZIL

The accompanying photograph shows a group of the teachers of the Lavras Agricultural School (Escola Agricola de Lavras). The writer is to the right of the Dean, Prof. B. H. Hunnicutt of Atlanta, Ga. Four of the teachers are Americans and two of the Brazilians received agricultural instruction at Ames, Iowa. Commencement day was November 26th.

Having just contracted with the government of the state of Minas Geraes to devote one-half of my time to the investigation of diseases of animals, I will drop half of my school work. My principal field of labor will be in the western half of Minas, some 200,000 square miles of territory.

There are naturally a number of very interesting troubles here Among them is a calf diarrhea which causes very heavy losses. Bacteriologists of the federal department of agriculture and of the Instituto Oswaldo Cruz claim the cause to be a filtrable organism, but, they state that owing to numerous secondary invaders, it manifests itself in various forms. They, therefore, credit this organism as the initial cause of three conditions that heretofore have been considered separate entities; namely, pneumo-enterite, peste de seccar (drying up) and peste dos polmoes (swellings—subcutaneous abscesses). A serum is being produced from hyperimmunized cattle and a bacterial vaccine for treatment and control of these conditions.

Prof. P. H. Rolfs, formerly of the University of Florida, has renewed his contract with the state of Minas for another term of four years as head of the state school of agriculture and veterinary science. While our school is also in Minas, it requires two days by rail to go from one school to the other. Their buildings are about completed, and they expect to open school in March. Prof. Rolfs was on a short visit to the United States in November.

G. A. Roberts

Lavras, Minas, Brazil

## SUPPLYING MINERAL FEEDS A SIDE LINE FOR VETERINARIANS

Farm land in the Corn Belt, practically all of which has been under cultivation for the past fifty or sixty years, is becoming so deficient in mineral matter that it has become necessary to supply the greater percentage of this land with calcium and phosphorus in order to make it return interest on the investment. This is being done to a great extent by supplying crushed limestone and rock phosphate, which procedure has been proved beyond a doubt to increase both the quantity and quality of yield.

Is it not probable that live stock raised on land which is deficient in mineral matter should in time suffer for lack of minerals, especially calcium and phosphorus, which are the predominating minerals of the animal skeleton? When females of the animal family conceive and their systems are called upon for mineral matter with which to develop the bony structures of their offspring, is it not natural that the mother should draw on her body store of these minerals in order to supply this urgent demand, especially when the feed is produced on land low in minerals and therefore is itself low in necessary mineral content?

It is possible that the prevailing susceptibility to fractures of bones on slight provocation in aged females might be reduced and prevented to a certain extent by supplying and maintaining within the animal body sufficient mineral matter to offset the drain on the supply; also that the animal mother might keep in better physical condition while furnishing milk to her young, if supplied with the necessary minerals. A supply of minerals might overcome to a certain extent the decrease in the development of bone in hogs. It has been proved by various experiment stations that minerals materially hasten the development of hogs for market at a great saving in cost over those that receive no minerals.

I might mention that this does not apply to some of the minerals on the market which are practically the same as stock foods, condition powders, animal regulators, worm expellers and cure-alls under various other names, containing from 30 per cent to 80 per cent of sodium and magnesium sulphate and sodium chlorid along with various other drugs, which are essential when indicated but hardly palatable as a steady diet when the average animal is forced to consume them in order to derive its necessary allowance of salt.

Dr. A. T. Kinsley of Kansas City, in Veter-

inary Medicine of February, 1922, stated that from the evidence now available it would seem that little if any feed has sufficient mineral ingredients to give the best results. Also in the Poland China Journal of May, 1921, he stated that rickets is commonly found in pigs that are receiving an insufficient quantity of mineral supplements in the feed. In the same journal under date of April, 1921, the doctor stated that milk production in sows and growth in pigs require a diet rich in mineral elements, especially calcium and phosphorus.

It is likely also that any considerable deficiency of either calcium or phosphorus in the rations of a milking cow will bring about the loss of both elements from the bones of the animal if continued for more than two or three weeks, and that a cow which has suffered from lack of either of these minerals during her lactation period will be depleted when she reaches the end of that period.

These building elements can probably be supplied in sufficient quantity in two different ways—either by feeding the ordinary feeds much more liberally than the feeding standard requires, or by adding calcium and phosphorus in the form of inorganic salts directly to the rations.

I am confident that the latter method will finally be adopted and will effect a great saving in the cost of producing milk

Again in Veterinary Medicine of February, 1922, Dr. Kinsley stated that the feed allowed the breeding sow determines to a very large degree the weight, size, vigor, coat, condition, bone development and general health of the newly farrowed pig. A good mineral feed is an insurance and should be allowed the sow at all times.

These statements from so well recognized an authority on swine as Dr. Kinsley should receive more publicity in veterinary journals and more consideration from the practitioner in the Corn Belt.

Personal observations have convinced me that some of the best bottom land in my locality is producing each year more and more hogs afflicted with the condition of so-called "down-in-the-back," and I am becoming more convinced each year that this is malnutrition of the bone due to lack of proper minerals. This year there were three large herds (around one hundred head each) in my locality which were practically a total loss to their owners because of this condition, and as we all know, it does not respond favorably to delayed treatment. It, therefore, behooves us to educate our clients to the necessity of having proper minerals supplied to their animals at all times and especially to brood sows.

We can confer a great favor on our clients and at the same time materially increase our incomes by supplying at a reasonable price a good mineral feed manufactured for, and distributed wholly through, the veterinary profession. I am slowly being converted to the doctrine advanced by many veterinarians that the way to increase our practice and at the same time do away to a great extent with peddlers and agents of stock remedies is to supply such preparations as our clients may need, thus rendering them a good service and incidentally ourselves by educating them to call on us for all of their needs along veterinary lines.

I am supplying such a mineral to my clients, the preparation consisting of calcium phosphate, bone charcoal, sodium chlorid and potassium iodid, in carload lots at three and one-half cents per pound f. o. b. station, and am surprised how little work and talking are necessary to obtain orders. Once established, this side line will take of itself.

L. C. Hull, D. V. M

Joslin, Ill.

## AVIAN TUBERCULOSIS COMMUNICABLE TO OTHER ANIMALS

Fowls are generally not susceptible to the human and bovine strains of tuberculosis under experimental conditions, but the avian type may be communicated to swine by feeding young pigs the carcasses of tuberculous chickens or by feeding and injecting intravenously cultures of the avian tuberculosis organism. The lesions of the avian type of tuberculosis experimentally induced in pigs remain local in character rather than spreading throughout the body. Calves may also be infected experimentally by injecting intramuscularly, macerated tuberculous organs from chickens, but the lesions induced, as in pigs, are of a restricted or local character. The existence of tuberculosis in man, cattle and poultry on the same premises, is therefore not regarded as evidence substantiating the theory of the inter-transmissibility of the avian type of the disease to other animal species. Sparrows and other flying birds may possibly carry the disease from farm to farm. Tuberculosis of sparrows may be communicated to chickens by feeding the affected organs or by feeding and injecting the cultures.—Animal Pathology Exchange, Univ. of Illinois.

# Nutritional Deficiencies

SCIENTIFIC investigation by the most eminent authorities prove conclusively that many ailments of the animal's body are due to the fact that the vitality will not ward off the harmful agents.

THIS lowered vitality is due to an incomplete ration which is usually lacking in minerals. The absence of certain nutritional elements will lower the resistance of the victim to the point where infection will have an opportunity to destroy.

CONTINUED cropping of our agricultural lands have rendered most of them deficient in certain mineral elements. Grains and forage grown on such lands are also deficient in these elements and animals fed on such feed, which includes most of the feed available, require mineral supplements for the best gains and for building up the vitality necessary to resist or overcome the effects of harmful agents.

THE experiments of many investigators show that the lack of certain elements in the ration will:

(1) Prevent animals from breeding
(2) Produce abortion
(3) Result in weak offspring
(4) Cause rickets
(5) Arrest growth
(6) Decrease the resistance to many infections
(7) Result in starvation although apparently abundant feed be supplied.

HOOSIER Mineral Feed for all classes of livestock supplies this deficiency and the Veterinarian is the logical representative to supply it in his locality.

Make a survey of your locality and you will see that thousands of dollars worth of mineral feeds are being fed. Live Veterinarians now acting as our field representatives often have an income from commissions on their sales, greater than that derived from Veterinary Practice. Our formulas are open and our feeds are sold at a price the farmer can afford to pay.

**You have no stock to handle. We ship direct.**
**You have no accounts to carry. We bill direct.**

Get in communication with us. It is to your interest as a practitioner and we know we can make it profitable for you.

## Hoosier Mineral Feed Company

GREENWOOD, INDIANA

"Making Animal Tagging Easy"

**KETCHUM CLINCHER**

The new self-piercing and self-clinching bright STEEL tag for Cattle, Sheep and Hogs—that stays in. Three sizes. Numbered and Lettered to suit. Write for descriptions and prices.

KETCHUM MFG. CO., Dept. A, Luzerne, N. Y.

## BUSINESS METHODS IN VETERINARY PRACTICE

**By M. V. Burgett, D. V. S.**

In modern times, the formula for building and maintaining a successful business invariably includes an appropriation for advertising That advertising is the life blood of modern business is conclusively proved by many examples where advertising appropriations have been mistakenly discontinued—with a sequel of swift disaster.

Perhaps the most notorious instance, at least the one most often quoted, is in the history of the Pyle family, manufacturers of Pearline, the first washing powder. In 1907, the last of the Pyles died. The executors of the estate, not being familiar with advertising, concluded it was unnecessary to advertise any more because everybody knew what Pearline was, and turned the appropriation of $500,000 for the next year back into the treasury.

From that moment the business collapsed like a punctured balloon. In 1914, the emaciated remnants of the business were sold for $7,000 to Proctor & Gamble. Without being advertised, to, the public had forgotten what Pearline was in seven short years. A magnificent business had degenerated to practically nothing.

Another sort of mistake is the business which is started by men who have no conception of the necessity of advertising. A slow, dead drag from the start; and, without the lightening, speeding-up effect of advertising, foredoomed to wheeze asthmatically during its short journey on the high road of business. These miscarried efforts make up the great majority of the thousands of yearly business failures.

Such businesses are usually started by men who have had but little previous business experience. They are found everywhere and in every line. Multitudes try their hand at running grocery stores, dry goods stores, garages, hardware stores, manufacturing plants, and many other businesses. A few quit, more fail quickly, others drag along to a lingering death and some learn to advertise. Those who learn to advertise grow into the large successful businesses.

In the veterinary profession a peculiar situation exists. Many are waking up to the fact that the individual practitioner and the profession as a whole, need advertising, but no one seems to know what to do about it. A few shudder at the word, and say we should not advertise because it is not ethical. To them advertising means the rant and raving of an "advertising" dentist, or a chiropractor.

The rest of us are just milling around lost in an impenetrable forest, like the well lubricated man who had walked into the same lamp post several times. Oh, for another Moses to lead us out of this one-post wilderness.

## METHANOL

Some time ago attention was called to the coinage of this word to be used in the future to designate methyl alcohol, commonly called wood alcohol. The purpose was not to obtain a shorter word for this important material nor to dignify it with a high-sounding title but to provide a trade designation which would not involve the word "alcohol" and consequently detract from the use of this material as a beverage by the uninformed. In one year in one of our larger cities there were fifty-four deaths traceable to the internal use of wood alcohol. As soon as the word methanol had been accepted by the trade and users, the number of deaths in the same locality dropped to less than twenty in a year. It is believed that a great deal more has been accomplished by this ingenious device than would have been possible by any campaign of education or legal enforcements.—Scientific American.

Alfalfa hay and corn silage together supply ideal roughage for the dairy cow. A cow ordinarily eats 30 to 40 pounds of the silage per day and from 10 to 20 pounds of hay.

There are said to be 3,000,000 lepers in the world; 7,000 in Europe; 30,000 in South America and the West Indies; 500,000 in Africa; and the remainder in Asia and islands of the Pacific. Leprosy is a disease of bad hygiene. It does not spread greatly among peoples having a high standard of living and is easily controlled among such peoples by sanitary measures. Segregation, first adopted by Moses, is effective in preventing the spread of leprosy.

## DECREASE OF VETERINARIANS

Before the war, agricultural colleges in the United States and Canada turned out 800 veterinarians annually. Last year the same colleges only produced 125 graduates. At the same time, it is estimated that 450 veterinarians are retiring each year. A shortage is due, and a shortage of good veterinarians is what no farming country can afford. The trouble is that with the decrease in the number of horses, the income of the average veterinarian has been cut down heavily. Farmers will doctor a sick cow, or hog, or sheep, themselves; if the animal dies, the loss is not great. A horse, however, is worth enough so that a call for the veterinarian looks like good business. There has been a desperate effort to make up for this loss of income in other ways. Some of the less intelligent and less scrupulous have furthered the use of vaccines of doubtful value. Some have quit the profession. Some have been able to make jobs for themselves as health officers for livestock in rural neighborhoods. It seems to us that the members of this last group have the right idea. An association of farmers could well afford to pay a veterinarian a good income to have him make monthly visits to each farm, check up on the condition of the livestock and recommend suitable action. The veterinarian's services would also, of course, be available in case of an outbreak of disease. The farmers, in other words, would pay him to keep their livestock well instead of paying him for curing them after they were sick. There is profit in a plan of this sort for both farmer and veterinarian. It would pay the departments of veterinary medicine in our colleges to study, along with technical subjects, the best ways of securing the general adoption of such a program.—Wallace's Farmer.

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Dr. R. E. Dilley and Dr. M. C. Eckley reported the prevalence of "flu" among swine in Knox county, Illinois, last November. Farmers at first thought the disease was hog cholera. In the opinion of Dr. Dilley, hogs immune to cholera seem to have more resistance to "flu" than animals not immunized.

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An outbreak of shipping fever in the army stables at Ft. Sheridan, Ill., was reported early in December A similar outbreak at the army remount station at Grand Haven, Mich., caused army headquarters to order Lieut.H. K. Moore, Ft. Sheridan veterinarian, to Grand Haven.

**SYLVO**

An ideal, inexpensive, aromatic disinfectant and antiseptic. Much stronger than carbolic acid. So nontoxic it may be used freely even on cats without harmful results.

**Price: Gallon, $1.50; ½-barrel, per gal., $1.25; barrel, per gal., $1.15**

**CREOLYPTOL**

The supreme guaiacol-creosote-eucalyptus compound makes a perfect pink emulsion. Superior in the treatment of distemper, shipping fever, catarrh, influenza, flu in swine, etc. Splendid for cough mixtures.

**Price: $6.00 per gallon. In 5 gallon lots, $5.40 per gallon**

**CAMPHOLIC**

A superior camphor preparation. Makes a perfect white emulsion. An excellent internal and external nontoxic, nonirritating antiseptic and deodorant. Unexcelled in bloating in cows, flatulance and spasmodic colic in horses, gastric and intestinal fermentation, etc.

**Price $3.25 per gallon. In 5 gallon lots, $3.00 per gallon.**

**Write for catalog of our complete line of veterinary remedies.**

**Kindly give name of nearest jobber**

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MILWAUKEE, WIS.

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U.S. VETERINARY LICENSE No 102
ANTI-HOG CHOLERA SERUM

Clean Material Means
Clean
Serum and Virus

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Lathrop, Missouri

## CHANGES RELATIVE TO VETERINARY OFFICERS, REGULAR ARMY

Major Wilfred J. Stokes died at Sternberg General Hospital, Philippine Islands, on November 3, 1924.

Captain Harry E. Van Tuyl was relieved from duty at Fort Ringgold, Texas, effective November 15, 1924, and on expiration of leave will sail from San Francisco on Government transport December 30, 1924, for duty in the Philippine Department.

Captain Mott Ramsey has been assigned to duty at Fort Ringgold, Texas, on completion of his present tour of foreign service in February, 1925.

Major R. C. Musser has been relieved from duty at Chicago Quartermaster Intermediate Depot and will sail from New York City on December 5, 1924, for the Philippine Department for duty.

Major Herbert S. Williams has been relieved from duty at Fort Bliss, Texas, and will report on December 1, 1924, to the Surgeon General for duty as Attending Veterinarian, Washington, D. C., and to the Commanding General, District of Washington, as District Veterinarian.

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## ADDITIONAL RESERVE OFFICERS

**Major:**

Hoyt, David Morris, 227 N. Petersboro St., Canastota, N. Y.

**Captain:**

Stotchik, Julius, Bastrop, Texas.

**1st Lieuts:**

Glaisyer, Wallace V., Coquille, Oregon.

Word, Neil Erskine, 870 W. 181st Street, New York, N. Y.

**2nd Lieuts:**

Clarvoe, Harold McK., Hendersonville, N. C.

Smotherman, Ervin Claud, 309 N. Church St., Hillsboro, Texas.

**Changes in Status:**

**Promotions:**

Meador, Daniel John, Auburn, Alabama, promoted to Major, Vet-ORC.

McConnell, Wm. Clarence, 623 N. Burgess Street, P. O. Box 88, Holdenville, Oklahoma, promoted to Major, Vet-ORC.

Marcus, Carlton P., C-4 Haverford Apartments, Atlantic City, N. J., promoted to Captain, Vet-ORC.

Marsh, Edward T., Ulrich, Mo., promoted to 1st Lt. Vet-ORC.

Hartke, George B., 802 Findlay Street, Cincinnati, Ohio, promoted to 1st Lieut., Vet-ORC.

Button, Otis G., 2909 S. "M" Street, Tacoma, Washington, promoted to Captain, Vet-ORC.

---

I am a general practitioner, and every article in Veterinary Medicine is interesting to me. I enjoy the journal as it is and has been.

G. W. Musselman, M. D. V.
Denver, Ind.

---

I am very well satisfied with Veterinary Medicine.

J. Hodges, D. V. M.
DeWitt, Ia.

---

### DEATH OF DR. McKILLIP

Dr. M. H. McKillip, 78, died at his home in Chicago, December 20th, after a lingering illness of about a year.

For many years, Doctor McKillip was a commanding figure in the veterinary profession. He was the founder and owner and president of the McKillip Veterinary College throughout the period of its existence.

Until the time of his retirement, about ten years ago, Doctor McKillip was at the head of what was credited with being the largest veterinary practice in the world. He was a noted surgeon and renowned expert on lameness. The practice firm of which Doctor McKillip was the head included his three sons, George B., Chester A., and Walter J. It also during the nearly forty years that he was at the head of it, numbered among its employees not a few veterinarians who have become prominent in the profession. Among these may be mentioned Dr. John M. Wright, later state veterinarian of Illinois for eight years, now retired, and Dr. L. A. Merillat, now president of the A. V M. A.

Doctor McKillip was a graduate of the Ontario Veterinary College and of the old Chicago Medical College, now the Northwestern Medical College.

In practice and in the management of his practice, he was extraordinarily successful, accumulating a large competence, which at the time of his retirement, through wise investments, had brought his wealth into the millions.

He is survived by his widow, four sons and three daughters.

Few men in veterinary education in America have equaled Doctor McKillip in influence upon the students who came under his instruction. Every McKillip man, and the graduates of the school are scattered over the civilized world, always had the highest regard for the professional ability, the characer and the ideals of Doctor M. H. McKillip.


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Dr. C. G. Stallworth, Secretary-Treasurer of the Mississippi State Veterinary Medical Association, has announced that the next meeting will be held at Greenville, Miss., January 19th and 20th. Dr. Stallworth further states: "Greenville is practically the geographical center of the Yazoo-Mississippi Delta, also the most centrally located point embracing the anthrax districts of Mississippi, Arkansas, Louisiana and Tennessee. The veterinarians of these surrounding states are co-operating with us on this one phase of our program alone; consequently, we see fit to set aside one period to discuss ways and means to better control anthrax. Mississippi veterinarians are prepared to give perhaps more information as to field conditions than any other group of men, because of our years of experience with the conditions, together with the fact that we have recently experienced the worst infection in the history of the state. There will be many other interesting papers and discussions by some of the most prominent veterinarians in this country, closing with an excellent clinic. We are striving to make this meeting of interest and benefit to all members of the profession A cordial invitation is extended to all veterinarians throughout the country to attend."

## DR. JOHN H. BLATTENBERG

Dr. John H. Blattenberg, 55, of Lima, Ohio, dropped dead on November 12, 1924, while on a professional call. Death was due to cerebral hemorrhage. He had been in apparently good health and acted as grand marshal of the Armistice Day parade the day before. He went to the Lima Driving Park to treat a horse and was preparing to enter his automobile when he was stricken. He died instantly.

The deceased was born near Smithville, Ohio, May 2, 1869, and came to Lima 30 years ago to reside. He attended Smithville college and graduated from the Ontario Veterinary College in 1893. Since that time, with the exception of one year spent in Toledo, he practiced in Lima.

He was a member of the American Veterinary Medical Association and was serving as first vice-president of that organization when he was

called into service in 1917. He also belonged to the Ohio State Veterinary Medical Association, of which he was president in 1903-04. He was an active member of the American Legion, the Elks, and K. of P. lodges and was a thirty-second degree Mason. He was a member and past president of the Rotary club, having been made president in honor of his service in the World War.

Dr. Blattenberg's great-grandfather served in the Revolutionary War; his grandfather in the Mexican War; his father fought in the Civil War; and Blattenberg was a major in the Fifth division in the World War. He spent sixteen months overseas.

On his return from France he was married to Mrs. Helen May Hoffer of Mansfield, Ohio, and in addition to his wife, he leaves a two-year-old daughter; also his mother and a sister, both residing in Smithville.

Members of the American Legion acted as pall bearers at the funeral, and the Knights Templar had charge of the services.

In the review of noted veterinarians by Dr. D. Arthur Hughes, published in Veterinary Medicine in 1915, he gave the following account of Dr. Blattenberg's ability: "He is known as a man of much ingenuity in surgical work and a man who triumphs in major operations. The Blattenberg burr for the roaring operation in horses is well known, which is typical of his adeptness in practical lines of work. Dr. Blattenberg early espoused the cause of veterinary organization in Ohio and has been president of the Ohio Veterinary Medical Association. Financially he has been extraordinarily successful for a veterinarian Having accumulated this world's goods beyond his needs, it may be said truthfully that he practices for fun only.

"In his profession he is known throughout the length and breadth of the country as a man set apart by his talents as belonging in the group of our best surgical operators. He has two hobbies: 'keenness of observation,' and 'conscientiousness,' in which nuggets he finds the golden way to success in veterinary work. Dr. Blattenberg is the kind of man who does not quarrel with the world. But he does his work in his own ingenious way and 'takes care of the sense, letting the sounds take care of themselves.'"

## RESOLUTION ON DEATH OF DOCTOR McEACHRAN

At a special joint meeting of the Council of the Veterinary School of the University of Montreal and the Board of Governors of the College of Veterinary Surgeons of the Province of Quebec, the following resolution was unanimously adopted:

This meeting has learned with deep regret of the death of Dr. Duncan McEachran, F. R. C. V. S., D. V. S., L. L. D., professor emeritus of McGill University, honorary member of the College of Veterinary Surgeons of the Province of Quebec, and wish to extend to the family of deceased its very sincere sympathies in their sad bereavement.

It is the feeling of this meeting that through the death of Dr. McEachran the profession has suffered the irreparable loss of a member whose efficient work was performed at a time when science and the country most urgently needed the help of men of wide vision and ability. Furthermore, this meeting feels that Dr. Duncan McEachran's endeavours in the interest of the profession will stand out as a monument to the

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memory of this distinguished scholar whose high ideals should set a goal for those who will benefit by his immense achievement for generations to come.

That a copy of this resolution be sent to the family of the deceased and the press of Montreal and Toronto.

Albert Dauth, D. V. M., Secretary

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The increase in the number of reindeer in Alaska each year runs from 33 to 45 per cent of the total number of animals in the herd. This percentage can be raised by a better understanding of herd management on the part of the Eskimos and other owners, and better business methods in marketing the meat will result in a higher output. The Biological Survey of the United States Department of Agriculture conducts important investigational work in Alaska in the interests of the reindeer industry, including studies of diseases and parasites, feeding experiments to determine the nutritive values of different types of native forage, poison-plant problems, herd management, and breed improvement.

---

I read Veterinary Medicine with much interest.

Lansdown, Pa. Walter G White

### CONTROL OF SAPONIFIED CRESOL SOLUTIONS

Effective methods for controlling saponified cresol solutions, particularly the proprietary brands used in official disinfection under supervision of the Bureau of Animal Industry, are discussed in U. S. Dept. of Agriculture Bulletin No. 1308, just issued. The functions that such preparations must perform in the field are reviewed and a set of specifications drawn to cover the evident requirements. Tentative standards for performance and composition are proposed. Copies of the bulletin may be had free, as long as the supply lasts, by writing to the Department of Agriculture, Washington, D. C.

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The article on the removal of the odor glands of skunks in the July issue may not have appealed to some, but just recently I was called on to do this operation, and had I not seen the article, I am not so sure that I would have undertaken the work. The returns from performing the operation, which I was thus enabled to do, will pay for the journal for several years.

A. M. Bushong, D. V. S.

Pulaski City, Va.

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## KANSAS VETERINARY RADIO PROGRAM

Dr. R. R. Dykstra, Dean, Division of Veterinary Medicine, Kansas State Agricultural College, has announced that the college has recently established a radio broadcasting station which will be known as Station KSAC Its wave length is 341 meters. The station is as powerful as any other station in the United States, with the exception of the exceedingly powerful stations, and has been heard in all parts of the country.

From time to time members of the veterinary faculty will give addresses, and the following is a list of the subjects that have been selected and approved. The first addresses by the members of the veterinary staff will be during the noonday period commencing at 12:30, December 29th, 30th, and 31st. These talks will cover the first three subjects in the order given below. The order in which the addresses other than these three preliminary ones will be given has not yet been decided upon.

The Services of the Veterinarian to the Community, by Dr. J. H. Burt.

Animal Diseases Communicable to Man, by Dr. R. R. Dykstra.

The Importance of Early Medical Attention in Animal Diseases, by Dr. J. F. Bullard.

The Veterinarian and Human Health, by Dr. R R. Dykstra.

What the Veterinarian Owes to His Community, by Dr. J. H. Burt.

How to Minimize Animal Disease Losses, by Dr. H. F. Lienhardt.

Blackleg Prevention, by Dr. J. P. Scott.

The Influence of Sanitation on the Health of Hogs, by Dr. W. M. McLeod.

Abortion Disease of Cattle, by Dr. E. J. Frick

The Problem of the Non-Breeder on the Farm, by Dr. E. J. Frick.

The Care of the Diseased Udder, by Dr E. J. Frick.

Serum Treatment for Hog Cholera, by Dr. N. D. Harwood.

Sanitation in the Control of Infectious Abortion on the Farm, by Dr. C. H. Kitselman.

Handling Rabies Suspects, by Dr C. E. Sawyer.

Methods of Disinfecting a Stable after an Infectious Disease, by Dr. J. F. Bullard.

Common Disinfectants for Farm Use, by Dr. J. F. Bullard.

The Army Veterinarian, by Capt. Gerald W. Fitzgerald.

Dr. Dykstra advises that possibly veterinar-

ians in the United States would like to have certain topics discussed. If so and they will submit the topic to him, or probably the material they want broadcasted, the necessary arrangements can be made.

### PLAN TO STUDY FOOT-AND-MOUTH DISEASE ABROAD

Plans of the United States Department of Agriculture to safeguard the livestock industry from possible outbreaks of foot-and-mouth disease in the future include research work abroad. The experience of foreign investigators points to the extreme difficulty of preventing the escape of the virus of the disease. For that reason the department does not consider it safe to permit experimentation in this country. The plan provides for the selection of a foreign country where the disease is constantly present, preferably one where work could be conducted in close co-operation with foreign investigators engaged in similar research work.

The outline of method provides for the appointment of a committee of three of the best qualified scientists, one of whom would be from the Bureau of Animal Industry. The work of the committee as proposed would be to make an exhaustive study of scientific investigations thus far conducted and to collaborate with foreign scientists in continued research.

In making his recommendation, Dr. John R. Mohler, Chief of the Bureau of Animal Industry, states: "The five outbreaks that the United States has experienced during the last 40 years have been suppressed promptly by the slaughter method. With our present knowledge of foot-and-mouth disease this method is the most effective and economical for this country. However, we are very anxious to find, if possible, a better and more scientific method of combating the disease."

The present recommendations of the Bureau of Animal Industry, which have been approved by Secretary Gore, point out that it will be necessary to proceed upon the assumption that work of this kind may require months, and possibly years, to produce the results expected The plan would result, at least, in enlarging the scientific knowledge of the disease and appears to be the most feasible way of conducting research without endangering the livestock of the United States.

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Dr. A. T. Kinsley will give a course in swine diseases at the annual conference of the Alabama school at Auburn, the first week in February.

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I have always enjoyed Veterinary Medicine and have received great help from it. Agricultural and stock conditions are changing so rapidly that one never knows what he needs most; hence, the things that do not interest us today may tomorrow. I am sure the publishers of Veterinary Medicjne know the needs of the profession and will continue to give us interesting literature to broaden our vision in our various fields.

S. C. Sorenson

Tescott, Kan.

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I always enjoy the journal each month and read it all, including the advertisements. Of course, there are a number of subjects discussed which we in rural districts do not come in contact with, but the journal would not be complete without them I don't believe I could improve on it in any way.

E. E. Nelms, D. V. M.

Fairview, Ill.

---

I have rarely ever seen an article in Veterinary Medicine that I did not read and think I profited by.

John H. Gould

Des Moines, Ia.

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## ILLINOIS MEETING

The forty-second annual meeting of the Illinois State Veterinary Medical Association was held at the Lexington Hotel, Chicago, December 2nd and 3rd. About 150 veterinarians were in attendance, and the following interesting program was presented:

"The American Veterinary Medical Association," by President L. A. Merillat and Secretary-Editor H. Preston Hoskins.

"The Work of the Division of Animal Pathology of the University of Illinois," by Dr. I. B. Boughton, Director.

"The Duties of the County Veterinarian," by Dr J. H. Lintner, U. S. Bureau of Animal Industry.

"Humane Work by the Veterinarian," by Dr. A. H. Baker, Chicago.

"Famous Films," by Dr W. J. Embree, Chief Veterinarian, Western Weighing and Inspection Bureau, Chicago.

"Antiseptics in Practice," by Dr. L. M. Morin, McLean.

"Anaphylaxis," by Dr. E. L. Quitman, Chicago.

"The Feeding of Swine Before and After Vaccination," by Dr. R. E. Kluck, Forreston.

"Medical Derivatives of the Animal Body," by Dr. A. A. Liebold, Chicago.

"Hints on Swine Practice," by Dr. E. R Steel, Grundy Center, Iowa, with discussion by Dr. J. S. Koen of Bloomington.

"Dairy Practice," by Dr. Harry Caldwell, Wheaton, with discussion by Dr. J. F. DeVine, Goshen, N. Y.

"Horse Practice," by Dr. John Jaffray, Chicago, with discussion by Dr. W. H. Welch, of Lexington.

"Small Animal Practice," by Dr. A. C. Worms, Chicago, with discussions by Dr. J. V. Lacroix, Evanston, and Dr. E. A. Dickerson, Springfield.

"Poultry Practice," by Dr. J. R. Christian, Woodhull, with discussion by Dr. Glen R. Brown of Hoopeston.

"The Swine Breeding Situation in the Cornbelt," by Dr. A T. Kinsley of Kansas City, with discussion by Dr. J. S. Koen.

"Foot-and-Mouth Disease in California," by Dr. L. E. Day, U. S. Bureau of Animal Industry, Chicago.

"The Successful Practitioner of the Future," by Dr. W. J. Martin, Kankakee.

"The Veterinary Service of the Chicago Health Department," by Dr. A. E. Becker, Chicago.

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"Infant Mortality Among Swine," by Dr C. C. Hastings, Williamsville.

"The Transmission of Human Disease to Animals," by Dr. T. G. Hull, Springfield.

'Stock Judging at Fairs," by Dr. T. A. Sigler, Greencastle, Ind.

"The Practitioner in Area Testing for Bovine Tuberculosis, the Iowa Plan," by Dr. E. R. Steel.

At the election of officers, Dr. E. L. Quitman was chosen as president; Dr. R. E Kluck, vice president; Dr. C. C. Hastings, board of censors; and Dr. W. B. Holmes, assistant secretary.

On the evening of December 3rd the meeting was adjourned to enable the members to attend the sessions of the U. S. Live Stock Association at the La Salle Hotel.

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I am well pleased with Veterinary Medicine.

M. W Ray

Clark, S. D

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As I have said many times, I believe Veterinary Medicine is the best magazine devoted to our profession on the market.

H. C. Groff

Cushing, Okla.

I am interested in all the articles published in Veterinary Medicine and am well pleased with the publication.

Chas. F. Oat

West Chester, Pa.

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### LIVESTOCK PICTURES FOR CLASSROOMS

Believing in the educational value of good pictures of livestock, the United States Department of Agriculture is distributing a series of ten pictures prepared especially for school use. Specialists in the Bureau of Animal Industry report that this series has met with an unusual demand. Pupils who are familiar with types of improved livestock, as shown in the pictures, naturally attempt to bring about improvement of the farm animals on their home farms. Moreover, instructors find the pictures useful in improving the appearance of classrooms.

The dual purpose which such educational material fills is illustrated by a recent request from the agricultural department of a Maine high school. The instructor requests a set "of the various farm animals which would be of value for classroom instruction as well as to cover the bare walls of the agricultural room."

## QUARTERMASTER REPORT ON HOGS

Post Hospital, Fort Blank
August 5, 1918

From: .....Blank, Contract Surgeon.
To: The Surgeon.
Subject: Sanitation Report.

1. The company hog-pens located on the easterly sloping bank of the creek running west and south of this depot are of three groups, viz: a south, middle and north group.

2. The south group of seven pens and middle group of eight pens are unutterably filthy and in a most grossly unsanitary condition, both as regards the life of the hogs, and as a menace to the welfare of the inhabitants of this depot, and its immediate environment. The interior of these pens is covered with old bones and litter, and inside and immediately in front of each pig house proper are holes filled with dirt and water in which the hogs wallow. The hogs present a most unhappy appearance, and by their surliness of temper and fatigue demonstrate that they are troubled and harried not only by their environment, which is unnatural to porcine tastes, but also by the swarms of flies which are originating at this station.

3. The north group of six pens is quite clean and dry throughout and the pigs demonstrate their contentment and satisfaction by activity, pleasant porcine demeanor and general cleanliness of body. There are no flies present in this group of pens.

4. It is recommended that these pens be raked clean of bones and litter, the same be burned and not merely piled in heaps, and the interior of pens be properly graded and drained by ditches. This will guarantee a full financial return and benefit to this depot from the hogs themselves.

.....
Sanitary Inspector

1st Indorsement

Quartermaster, Fort Blank, U. S. A., Aug. 23, 1918—To: The Commanding Officer Depot.

Returned.

1. This office learns with deep regret, that decent hogs must pine and fret, and lose their chaste and classic beauty, because some man neglects his duty. A sense of confidence misplaced offends a hog's esthetic taste, and every effort should be bent to keep him happy and content.

2. The undersigned is pleased to learn that this inspector did discern the difference in looks and style, between the hogs so coarse and vile, with manners surly and uncouth, in all the pens extending south, who not the least resemblance bore, to porkers of the Q. M. Corps (whose pens are farther to the north as in above report set forth). These animals so sleek and fine, the pink of excellence in swine, display upon their radiant features, the happy look of grateful creatures. The Quartermaster's pigs alone, maintain this high and lofty tone, and their appearance fresh and fair, betokens kind and loving care.

3. The fact is not so widely known, though in this letter clearly shown, that making the surroundings cleaner will greatly change a hog's "demeanor." Although the fact is likewise true, that in the Army there are few, expert enough in their profession to rightly read a hog's expression. To tell just where the trouble lies, by contemplation of his eyes, or by the wrinkles of his snoot, might stump the average recruit. It has been claimed that hogs will thrive, amid surroundings that would drive an animal of lofty pride to early death and suicide; that while his stomach is kept full, he thinks this cleanly stuff is "bull"; that plenty in the way of eats, his cup of happiness completes.

4. As these opinions seem to vary, concerning what is necessary, to elevate the moral tone, within the hog's peculiar zone, it is most strongly recommended, that hogs in future be attended by men expert in reading faces, who can at once detect the traces, upon the mournful physiog, of any poor disgruntled hog, that point to mental irritation or porcine trouble or vexation.

5. Psychology is thus combined with physiognomy refined, and just a dash of the occult, might help the ultimate result. 'Tis thought the man in charge should be a keen and competent M. D. Who but the Medical Department could have of wisdom such assortment? The truth is we have no such store of learning in the Q. M. Corps.

6. The main consensus of opinion, pertaining to the Hog's dominion (which is perhaps not far amiss) appears to be about like this: Despite all scientific lore, a hog remains just as before; he makes a picturesque display when viewed from far enough away; his grunt is musical and clear providing you are not too near; he smells serenely sweet and clean, if proper distance intervene. But notwithstanding speculation and philanthropic medication, and theories of demagogues, most hogs will still remain—just hogs.

.....
Captain, Quartermaster Corps

The foregoing was found by Major Shand,

V. C., in his old files. He does not know its source or whether it is official but sends it on for the amusement of others. Major Shand is now located at Ft. Sill, Oklahoma.

## CENTRAL MICHIGAN MEETING

The annual meeting of the Central Michigan Veterinary Medical Association was held at Jackson, Mich., November 20th, with forty veterinarians in attendance. When the association was organized ten years ago, it started with only seven members.

State Senator B. E. Brower and Dr. F. R. Town, Jackson city health officer, emphasized the possibilities for service in the profession. Dr. Town pointed out the aid veterinarians can give in promoting milk and meat inspection. Senator Brower urged the veterinarians to teach "Americanism" to their clients.

Dr. H. J Stefseth, of the Michigan Agricultural College, discussed diseases of turkeys, describing his work with tryparsamid in blackhead, this treatment giving promise of being highly effective. He also mentioned the alarming spread of "leg weakness" among chickens in Michigan, stating that an average of two dozen birds are received each day at the college for examination. Another interesting feature of Dr. Stefseth's talk was his explanation as to why the grouse of this country are becoming scarce. He said he autopsied many dead grouse and found they most invariably die from wounds inflicted by bird shot.

The work of the A. V. M. A. was described by Dr. H. Preston Hoskins, secretary of the association. Among other points, he brought out that a larger percentage of veterinarians belong to their professional associations than the followers of any other line of activity.

Dr. E. T. Hallman, professor of pathology at the M. A C., spoke on the newer aspects of diseases of the udder and the reproductive organs in cattle. In view of the latest findings in this field, he declared that it is becoming more and more apparent that adequate milk inspection is necessary at all times.

Dr. E. A. Erickson of Charlotte, described the display of pathological specimens which he had at the Charlotte county fair last fall. The specimens, preserved, were taken from animals in his practicing territory and attracted widespread attention. He urged veterinarians to put forth greater efforts in bringing the profession before the public.

Dean Giltner, of the M. A. C., also emphasized the matter of publicity and told about the lessened interest in veterinary education, stat-


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| Veterinary Medicine, Law, 5 vols., 1896 | 2.50 |
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ing there were more medical students at Ann Arbor than there are veterinary students in America.

Dr. H. M. Newton, B. A. I. veterinarian, described the work of controlling foot-and-mouth disease in the recent California outbreak He stated there were about a thousand ways in which the disease could be established.

Dr. J. Brodie of Pontiac, Dr. W. E. Wielden of Mason, Dr. B. Cavell of Northville, Dr. Curtis of Hillsdale, and Dr. Armstrong were among the other speakers on the program.

The following officers were elected: Dr. R. W. Richmond of Springport, president; Dr. Lee Davidson of Manchester, vice president; and Dr. W N. Armstrong of Concord, re-elected secretary.

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## COMMENCEMENT EXERCISES AT ONTARIO VETERINARY COLLEGE

The annual commencement exercises and presentation of prizes was held in the Assembly Hall of the Ontario Veterinary College on Wednesday, November 5th. A large gathering was present, including representatives from the Ontario Agricultural College, the Mayor and Council of Guelph, Chamber of Commerce, Board of Education, and other bodies. W. B. Roadhouse, Deputy Minister of Agriculture, and Sir Robert A. Falconer, President of the University of Toronto, also attended and delivered excellent addresses. Principal C. D. McGilvray acted as Chairman, and in his introductory remarks alluded to the great advancement which is becoming more noticeable in the application of veterinary science through the better trained graduate. It was also a matter of gratification that the attendance was again increasing, auguring well for the future, and indicating that general conditions were becoming more stabilized. In announcing the winners of the various prizes, Principal McGilvray drew attention to the cosmopolitan student body of the Ontario Veterinary College, mentioning the fact that there were present as students attending the college young men from all of the different provinces of Canada as well as from Great Britain and the United States. The Principal also expressed appreciation of the support rendered the college by the Department of Agriculture, under which it functions, as well as by the University of Toronto, which directs its educational policy and grants degrees in veterinary science to its graduates.

Mr. W. B. Roadhouse, Deputy Minister of Agriculture, expressed himself as being pleased with the continued progress manifested by the college and congratulated the student body on its high standard, as evidenced by the prizes being awarded to the successful candidates. The Department of Agriculture, through the Minister, had always taken a keen interest in promoting the welfare of the college, as by so doing it was felt that a distinct service was being rendered to agriculture, both in the Province of Ontario and throughout the entire Dominion.

Sir Robert Falconer, President of the University of Toronto, on rising to make his address, was extended a warm reception by the audience, who, no doubt, had still fresh in mind the splendid address which he delivered at a similar function last year. President Falconer was in excellent form and in the course of his address touched a responsive cord in those present. He seemed to have the right thought and the right word, and in alluding to the progress which we were making he thought that we had much to be thankful for and little to regret, as we had a great heritage. In this regard he cited the fact that the mineral wealth of Ontario was now reaching gigantic proportions each year which, together with its agricultural resources, its forests, fisheries, and industries, were a sure indication of permanency and a prosperous country. Having these material advantages it was our duty to use them to the best possible purpose and by means of education and the application of science a larger measure of usefulness would result through these different channels In addressing the student body in particular he recommended that they maintain a high standard of citizenship and to properly value the education which they were receiving and the opportunities offered through their education and training in the veterinary college, which was one of the colleges affiliated with the University. President Falconer inclined to the view that today our standards of education were being satisfactorily maintained and that the young men and women were now able to go forward to their life work even better equipped than before. In concluding, he appealed to those present to consider the problems of life as deserving of the closest attention in order that the best solution of our various problems might be arrived at. President Falconer then presented the prizes to the successful candidates, as follows:

### First Year Class

General Proficiency:

First Prize, R. V. Westerberg, Simsbury,

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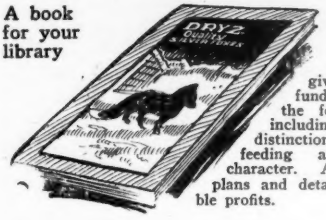


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Conn.; Second Prize, S. P. Giebelhaus, Stony Plain, Alta.; Third Prize, J. C. Bankier, Glasgow, Scotland.

Anatomy:
Special Prize awarded by Dr. H. D. Nelson. R. V. Westerberg, Simsbury, Conn.

Histology:
Special Prize awarded by Dr. H. E. Batt. R. V. Westerberg, Simsbury, Conn.

Canadian Army Veterinary Corps Prize:
Awarded to F. M. Wheatley, Fort Qu'Appelle, Sask.

**Second Year Class**

General Proficiency:
First Prize, L. F. Barthelme, Labette, Kansas; Second Prize, F. J. Cote, Guelph, Ontario; Third Prize, J. Gillies, Cedarville, Ont.

Anatomy:
Special Prize awarded by Dr. H. D. Nelson. F. J. Cote, Guelph, Ontario.

Histology:
Special Prize awarded by Dr. H. E. Batt. H. S. Smith, McKeesport, Pa.

Canadian Army Veterinary Corps Prize:
Awarded to C. M. Hamilton, Portage La Prairie, Man.

**Third Year Class**

General Proficiency:
First Prize, G. A. Edge, Hull, England; Second Prize, P. J Kelly, Osgoode, Ont.; Third Prize, W. J. Rumney, Victoria Harbour, Ont.

Canine Diseases:
Special Prize awarded by Dr. J. G. Harvey. P. Priestley, Kerrobert, Sask.

Canadian Army Veterinary Corps Prize:
Awarded to P. Priestley, Kerrobert, Sask.

Sporadic Diseases and Dentistry:
Special Prize awarded by Dr. J. N. Pringle. R. P. Swartz, Los Angeles, Cal

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Swine paralysis was recently reported in many herds of hogs in eastern Colorado, caused from a lack of minerals in the ration. The hogs sometimes go lame. Large lumps or swellings appear on the joints of the legs. In many instances the appetite of the animals remains normal, but they lose flesh, and very seldom any gains can be made. Dr. Glover, of the Colorado Agricultural College, advises the placing of air slaked lime in the drinking water to overcome the condition, also old bones and corn cobs burned together in the hog lots.

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A serum plant for the production of anti-hog cholera serum. The construction and arrangements are second to none. Cost $50,000.00. The West is producing more hogs than ever before.

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## MAN SUFFERS FROM ANIMAL DISEASES

"Man is his own worst enemy" in the spread of communicable diseases, but the lower animals are a close second. It is only necessary to cite bubonic plague, a disease of rats, which carried off 25 per cent of the world's population not so long ago and which is today costing the United States Government large sums of money in preventive measures. Another instance is sleeping sickness, a disease primarily of animals and transmitted by the tsetse fly, which makes certain parts of Africa actually uninhabitable for either white man or native.—Animal Pathology Exchange, University of Illinois.

## WHAT AGES CAN ANIMALS ATTAIN?

The highest age than can be attained by the various species of animals is very different and no regularities have been observed. Among mammals it can generally be said that the large animals live to be older than the small ones, but this law is not valid among the birds, the parrot, for example, reaching the same age as the eagle. Several kinds of polyps live for 50 years; the leech up to 27 years; the river crawfish 20 years; spiders mostly 1 to 2 years. Beetles have been kept prisoners 5 years. The queen bee often lives to be 5 years old, while the working bees usually live for only 6 weeks. Ants were observed in captivity up to 15 years. The toad is said to attain 40 years. A turtle was kept in captivity 150 years; the specimen in question may have been as much as 300 years old. The age of birds is known best. The household cock lives 15 to 20 years, the goose and the eider-duck 100 years; the swan 102 years; the fish-heron 60 years; the stork 70; the falcon 162; the golden eagle 104; the vulture 118; the horn-owl more than 68, perhaps 100 years; the blackbird 18; the canary as much as 24; the parrot above 100 years. Of the mammals the ass sometimes attains 106 years; the horse 40 to 60; the sheep 20; the dog 28; the cat 22; the elephant and the whale 200 years. —Abstract from recent book, Der Tierkorper als Selbstandiger Organismus, by R Hesse.

## THE DANISH GOLD TREATMENT OF TUBERCULOSIS

Hardly a year passes but that the announcement is made of some new method of treating tuberculosis. The hope that springs eternal in the breast of the consumptive is stimulated again, only to end in the apparently inevitable disappointment that has ensued so frequently. The most recent method to receive the sensational publicity duly accorded any venture in the treatment of tuberculosis is a preparation of gold, advanced in Denmark under the name "sanocrysin." As reported in the Ugeskrift for Laeger, meetings were held in Copenhagen, October 28 and 29, at which investigators of the new remedy gave their results to the Danish medical profession. Professor Moellgaard, the originator of the remedy, described its production, and stated that no reaction follows the introduction into the body of this remedy by the intravenous method, provided the tissues are healthy; but if they are tuberculous, a violent reaction ensues. It is assumed that the reaction is the result of release of material from tubercle bacilli that are destroyed by the remedy. The reaction is opposed by the injection of a specially prepared horse serum which, Moellgaard believes, already has greatly reduced the severity of the phenomena of the reaction. At the conference in Copenhagen, Moellgaard described the complete clinical recovery of two monkeys with severe tuberculous infection, following the use of his method. Several well known Danish clinicians reported brilliant results in the cases of many patients. However, there were several instances in which death had followed the administration of the remedy, presumably on account of difficulty in determining accurately the proper dosage. In discussing this work, the British Medical Journal points out that the most cautious of the speakers was Professor Moellgaard himself, and that he had been exceedingly reserved in his forecasts of the efficacy of "sanocrysin." In any event, it is also reported that Professor Moellgaard has asked the Medical Research Council of Great Britain to organize an investigation of the properties of the remedy. No doubt, in-

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formation will become available in the near future which will indicate more adequately whether or not the drug has any real virtues in a condition in which heretofore all remedies heralded as specific have failed.—Jour. A. M. A., Dec. 13. 1924.

### LIVESTOCK NECESSARY AS REFINERS OF RAW MATERIAL

In a talk delivered during the International Livestock Exposition, held at Chicago early in December, Dr. John R. Mohler, Chief of the Bureau of Animal Industry, United States Department of Agriculture, told briefly of the importance of livestock in our national economy. "One may ask," said Doctor Mohler, "why it is necessary or even desirable to have a large animal population in the country such as this with its millions of automobiles and trucks and its vast acres for producing cereal grains. The answer is simple. Our domestic animals, developed through long years of evolution, are marvelously efficient in converting vast quantities of grasses, forage, plants, and other products which are of slight direct value to mankind into valuable animal products. These products include meats, milk, butter, cheese, leather, fats, wool, mohair, and almost countless by-products ranging from violin strings to fertilizer.

"The United States contains the largest corn-producing region in the world, yet the human population uses only about one-tenth of that crop directly as food. The public appetite much prefers to use the corn crop in the form of juicy steaks and savory hams. Through the stockman's skill our domestic animals are becoming gradually more efficient in converting coarse feed into refined and concentrated products. As alchemists for the refinement of base materials, cattle, swine, and sheep—to say nothing of goats—have an enviable record."

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The importance of exercising constant vigilance in order to protect our live stock from foreign plagues connot be over-estimated, and an example of the danger of introduction of infectious disease from abroad was furnished by the finding of organisms of a serious foreign disease in the blood of four deer presented for entry in August, 1923, and held in one of our quarantine stations at the Pacific seaboard, where they were eventually slaughtered.—Report of Veterinary Director General, Dept. of Agriculture, Canada.

# Sheep Diseases

**By E. T. Baker, D. V. M.**

CONTAINS:

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8. A comprehensive discussion of plant poisoning.

9. Quarantine and transportation regulations.

No veterinarian's library is complete without this work. It contains information of value to every practitioner; information that can be found nowhere else. This work is scientific and intensely practical, and in view of the increased attention being given sheep raising in all parts of the country, of great importance.

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## BIOLOGICAL SURVEY AIDS IN CONTROLLING RABIES

Local occurrence of rabies in Washington, Oregon, northern California, Nevada, Utah, and Idaho among coyotes and bobcats has been widespread during several years past and has resulted in heavy losses of livestock and the biting of many people. Measures employed by the Biological Survey of the United States Department of Agriculture have brought rabies so fully under control that only occasional outbreaks were reported in 1923.

A serious situation developed in **Colorado,** where the disease was apparently introduced in the San Isabelle Forest by a rabid dog. As the case was not reported for several months, a large number of cattle and other domestic animals were bitten and died. Five people were also bitten—one by a bobcat, two by coyotes, and two by dogs. The Biological Survey made a special detail of men to conduct a vigorous poisoning campaign against possible wild carriers of rabies. Stockmen and local officials co-operated heartily and large numbers of coyotes were killed in the poisoning campaign, as many as sixteen being found at one poisoning station. As a result the range was thoroughly freed from coyotes and bobcats, and the disease effectively controlled.

Rabies later appeared among dogs and coyotes on the eastern edge of the San Luis Valley in Colorado, spreading very rapidly. County commissioners in six counties promptly appropriated funds to co-operate with the bureau and instituted a campaign against coyotes and worthless dogs. Regulations regarding the muzzling of dogs were enforced. Ten hunters were placed in the territory under the immediate supervision of a field assistant, and at the close of the year the situation was well in hand. Occasional outbreaks may be anticipated and efforts will be continued to prevent further spread of the disease.

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Seventeen and six-tenths per cent of the horses and donkeys in Pretoria died of "horse sickness" during 1923.

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Dr. Mark Francis, dean of the School of Veterinary Medicine at the A. & M. College, Texas, recently added to the veterinary museum at the school a mammoth bone found in a gravel bed in the San Saba river, near San Saba, Texas. The bone is believed to be the femur of a mastodon.

# CLASSIFIED ADVERTISEMENTS

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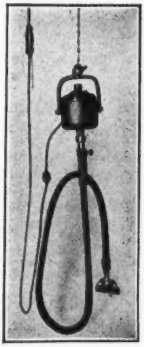

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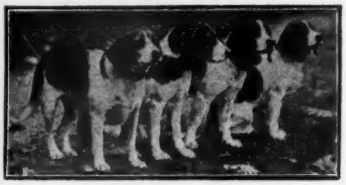

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## WISCONSIN VETERINARIANS TO MEET IN JANUARY

The tenth annual meeting of the Wisconsin Veterinary Medical Association will be held at Madison, January 27 to 30, 1925. The headquarters of the association is to be at the Park Hotel, opposite the State Capitol.

By popular request of the members, the third annual short course for Wisconsin veterinarians will be given during this week at the college of agriculture.

According to the program, Tuesday and Wednesday, January 27 and 28, will be devoted to the meeting of the association and to the reading of papers by members. An especially interesting feature of this program will be a motion picture film of the recent outbreak of the foot-and-mouth disease in California. The film was taken under the direction of the United States Department of Agriculture, Bureau of Animal Industry. It shows the activities of inspectors in charge of the control and eradication of the disease in the restricted area.

All day Thursday has been reserved for the short course program. At this time Dr. H. S. Murphey, Professor of Veterinary Anatomy at the Iowa State Agricultural College, the principal out-of-state contributor, will give a demonstration on "The Oestrus Cycle of the Cow." Eight members of the University of Wisconsin faculty will also contribute to the program.

A clinical program is to be held on the last day, January 30. Interesting cases for the surgical, medical, and small animal clinics have already been secured.

Dr. F. B. Hadley, of the University of Wisconsin, who has charge of the short course, says: "The course is planned for graduate veterinarians only. Its aim is to bring to the notice of the practitioner in the field the results of recent investigations and research studies in the laboratory By this means the practitioner can secure first-hand information relative to discoveries in the science that he practices."

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Hogs in dry lots should always have access to alfalfa in racks.

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Losses of sheep from a malady said to resemble pneumonia, were reported in Utah last fall. One or two sheep were dying each night in some herds.

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Every man who is a true doctor of medicine finds that he is not only a pursuer after knowledge, a devotee of science, and a practitioner of a noble art, that of the relief of the sufferings of his fellows, but that he has a divine calling to the advancement of the profession into which he has been admitted.

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According to an announcement by Dr. L. B. Barber, Secretary of the Oklahoma State Veterinary Medical Association, the winter meeting of the association will be held at the Huckins Hotel, Oklahoma City, March 2nd and 3rd.

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Dr. E. M. Nighbert, B. A. I. veterinarian, will talk on the control of stomach worms in sheep before the Tennessee Spring Lamb Improvement Association at Nashville, Tenn., January 7th.

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Dr. R. N. Birdwhistell, formerly at Pearl River, N. Y, is now located at Greenfield, Ind.

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Dr. O. G. Wiseman is now located at Cleveland, Ohio, where he is assisting Dr. R. R. Powell in small animal practice.

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Dr. J. A. Harris, formerly at Batavia, N. Y., has gone into partnership with Dr. Joseph Sutterley in practice at LeRoy, N. Y.

In a certain county in this state the farmers were objecting to the alleged high cost of vaccination. An outbreak of hog cholera occurred on one farm and a neighbor, who "knew how to use the needle" vaccinated the animals. The party who did the vaccinating did not report the case to the authorities, and when the trouble in this locality came to their attention there were six outbreaks instead of one to report.—I. K. Atherton, College Park, Md.

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The twenty-eighth annual meeting of the Minnesota State Veterinary Medical Association will be held at the Radisson Hotel, Minneapolis, January 15th and 16th. Dr. C. P. Fitch, University Farm, St. Paul, is secretary-treasurer of the association.

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Dr. R. S. Beattie gives his new address as Pearsall, Texas. He was formerly at New Braunfels, in the same state.

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Dr. D. W. Ashcraft accepted a position, November 1st, as instructor of anatomy in the Veterinary College, Ohio State University. He was formerly in practice with Dr. W. A. Brown at Columbus, Ohio.

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To a poor little mouse
That was pining away,
Savants gave a sample
Of Vitamin A.
Today he is feeling
So fit and so fat
That his trainers have asked
For a fight with the cat.
—Keith Preston,
Chicago Daily News

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Dr. Charles H. Haasjes and Miss Mildred Graham were married at Shelby, Michigan, November 20th.

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Dr. P. Malcolm, Chief of the Division of Animal Industry, Iowa Department of Agriculture, has announced that the semi-annual examination for veterinarians will be held at the Capitol building at Des Moines, January 19th and 20th.

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At the celebration of the 25th anniversary of the granting to the Royal Veterinary College at Budapest of the standing of a department of the University, the honorary degree of Doctor of Veterinary Medicine was conferred on Dr.


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Treatment was begun on January 14, 1924, by feeding FISTONE in bran and oats morning and evening. April 1, 1924, this case was pronounced by Doctor Merillat in perfect condition with no evidence of a fistula remaining. (The case was treated at the Indiana Veterinary College, Indianapolis, Ind.)

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John R. Mohler, Chief, U. S. Bureau of Animal Industry. Dr. Mohler is to be congratulated on being the recipient of this honor which has been granted only to a very few of the other outstanding men of the profession, making it a mark of distinction greatly to be prized.

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According to the Biological Survey of the U S. Department of Agriculture, pocket gophers, prairie dogs and ground squirrels are estimated to eat 8,000,000 tons of grass a year in Arizona alone. Even at 50 cents a ton, this grass would be worth $4,000,000.

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Dr. R. L. Brunson of Corona, Cal., accompanied his son to Manhattan, Kansas, last fall, when the latter enrolled in the Veterinary Division of the Kansas Agricultural College, this being his first year.

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Dr. P. M. Abernathy of Monroe, N. C., states that practice is good in his section and that there has been considerable demand for antirabic vaccination of dogs. In September, Dr. Abernathy was bitten by a rabid dog and took the Pasteur treatment.

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Dr. J. T. Mooney has changed his location from Crown City to Bladen, Ohio.

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Dr B. F. Kaupp gave a course of lectures on diseases of fowls at the School of Avian Pathology for veterinarians, held by the Massachusetts Extension Service at Walpole, Mass., last November. There were 65 veterinarians present.

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It is reported that the first woman veterinarian in Germany is Fraulein Ruth Eber, who recently qualified at Leipzig, where her father is professor of veterinary medicine at the university.

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The Recueil de Medecine Veterinaire, published at the Alfort Veterinary School, France, recently completed its hundredth volume. The journal was founded in 1824 and has since been issued continuously under the editorial supervision of the staff of the school.

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Dr. Joe H. Bux, Secretary-Treasurer, Arkansas Veterinary Examining Board, has announced that the board will convene in the state veterinarian's office at Little Rock, January 20th, for the purpose of examining applicants for license to practice and transacting such other business as may be necessary.

Dr. R. C. Mills, Redfield, Iowa, has been elected to the state senate from his district.

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The Army horse breeding plan, the operation of which was begun by the Quartermaster Corps in 1921, after three years shows an increase in the number of stallions from 159 to 350. It is reported that the stallions have performed satisfactorily and have been exceedingly popular in the communities where they have been located. The purchasing and breeding headquarters for the west central zone were removed last year from Boise, Idaho, to Colorado Springs, which section is referred to in the Quartermaster General's annual report as being in "the midst of one of the most promising developments of horse breeding in the country."

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Dr. S. S. Gibson of Randolph, Neb., was married to Miss Ruth Bartells of Carroll, Neb., at the bride's home on November 27th Dr. and Mrs. Gibson visited Chicago on their honeymoon, attending the meeting of the Illinois association, the U. S. Live Stock Sanitary Association and the International Live Stock Show. They will reside at Randolph, Neb.

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Dr. Hubert Shull, Secretary of the Arkansas Veterinary Association, has announced that the next meeting will be at Little Rock on January 22nd.

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Dr. A. L. Haggerty has changed his location from Dowagiac to Coldwater, Mich

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Dr. H. A. Burton is now in practice at Alexandria, La. He was formerly at Arcadia, in the same state.

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Dr. R. C. Hutchings has an up-to-date dog and cat hospital at Dallas, Texas. It is equipped with seventy-five kennels, all painted white. When a dog leaves, the kennel is repainted. A bacteriological laboratory is conducted in connection with the hospital, where rabies is diagnosed and autogenous vaccines are made. Dr. Hutchings also has a six-acre boarding and recreation farm for dogs, located outside of the city limits.

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According to the British Ministry of Health, rabies in animals in England and Wales may be considered as having disappeared, no case having occurred since December, 1921, and the government has discontinued its special arrangements for anti-rabic treatment.

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**BALTIMORE**

Dr. W. F. Holmgren of Lake Benton, Minn., was in Meeker county, Minn, for two weeks during November, assisting state and federal authorities in testing cattle for tuberculosis.

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Dr. C. E. Golden, B. A. I. veterinarian, returned to his home at Sioux City, Iowa, November 19th, having been absent since last April, when he was ordered to California to assist in fighting the foot-and-mouth disease.

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Dr. C. H. McDonald, formerly in Nevada, has located at Martinez, Cal. He is a graduate of the Chicago Veterinary College and has been in practice over 25 years.

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Dr. C. H. Crandon was arrested at Briggsville, Wis., charged with practicing veterinary medicine without a state license. In court the defendant exhibited a graduate's diploma and licenses from the state issued to him for several years. In spite of the licenses, however, it was claimed that Crandon is not the rightful owner of the diploma and is not eligible to receive license to practice.

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Oil of catnip is used by the U. S. Biological Survey as a lure for mountain lions, which may thus be attracted to poisoned bait. The extermination of these predatory animals has been very effective throughout the west. As a result, it is reported in Montana that there are larger herds of deer.

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Dr. M. W. Goode has changed his location from Hinton to Hobart, Okla

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Dr. H. C. Smith, formerly at New Hampton, Iowa, is now with the Ft. Dodge Serum Co., at Ft. Dodge.

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Dr. L. C. Hull of Joslin, Ill., was taken sick with a severe attack of uremic poisoning early in November and went to a sanitarium at Davenport, Iowa, Nov. 24, where he stated he expected to remain under treatment for three or four weeks. The latest report was that he was responding very favorably to the treatment and certainty was expressed as to ultimate recovery.

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Dr. J. F. McGhee has moved from Brookings to Lake Andes, S. D.

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Dr D. A. McKercher, formerly at Central Butte, Saskatchewan, has located at Bateman, in the same province.

Dr. D. R. Herberich has changed his location from North English, Iowa, to Kempton, Ill.

Dr. Ernest Schneider, formerly at Minneapolis, Minn., is now located at Bismarck, N. D.

Dr. George I. Smith, formerly at Elgin, Kansas, and now at Roswell, N. M., where he went for his health, reports that his condition is much improved but he must still be careful as to diet and guard against over-exertion.

Dr. J. D. Quelland has changed his location from Woonsocket to Pierre, S. D.

Dr R. L. Berger of Hamburg, Pa., Secretary of the Schuylkill Valley Veterinary Medical Association, states that the members of the association will take up the University of Pennsylvania extension course in diseases of the alimentary tract of cattle, this winter. The course comprises some nine lectures. The annual meeting of the association was held at Reading, Pa., December 17th. Regular meetings are held every third Wednesday of the month, except in September, October and November, when as a rule the sessions are omitted because of the different fairs being held at that time.

Dr. J. F. Schubert, formerly at Pearl River, N. Y., is now located at Tampa, Fla.

Dr. H. W. Brown is now located at Portland, Oregon, where he conducts the Rose City Veterinary Hospital.

Dr. Fred C. Myers gives his new address as Corvallis, Oregon.

Dr. J P. Mack has moved from Ludowici, Ga., to Sneads, Fla.

Dr. J. E. Murphy has moved from Chippewa Falls to Ellsworth, Wis.

Dr. A. S. Shimer gives his new address as Allentown, Pa. He was formerly at Bangor, Pa.

Dr. H. P. Waddle has changed his location from Snowden to Trenton, N. C.

The following run in a Miami, Florida, daily has proved profitable advertising:

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